

FCC & IC REPORT (WIFI)

Applicant: REACH Tech (Xiamen) Co., Ltd.

Address of Applicant: RM.303,#18,Guanri Road, Software Park II, Xiamen,361008, China

Equipment Under Test (EUT)

Product Name: Smart Phone

Model No.: R55

FCC ID: Z5JREACH-Q887R

Canada IC: 11908A-Q887R

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247
RSS-210 Issue 8 December 2010
RSS-Gen Issue 3 December 2010

Date of sample receipt: 20 Mar., 2014

Date of Test: 21 Mar., to 14 Apr., 2014

Date of report issued: 15 Apr., 2014

Test Result: PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2 Version

Version No.	Date	Description
00	15 Apr.,2014	Original

Prepared by:

Sera Xiang

Report Clerk

Date:

15 Apr.,2014

Reviewed by:

Abimb Yang

Project Engineer

Date:

15 Apr.,2014

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c) RSS-210,RSS-GEN	Pass
AC Power Line Conducted Emission	15.207 RSS-210,RSS-GEN	Pass
Conducted Peak Output Power	15.247 (b)(3) RSS-210,RSS-GEN	Pass
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2) RSS-210,RSS-GEN	Pass
Power Spectral Density	15.247 (e) RSS-210,RSS-GEN	Pass
Band Edge	15.247(d) RSS-210,RSS-GEN	Pass
Spurious Emission	15.205/15.209 RSS-210,RSS-GEN	Pass
Receiver spurious emissions	RSS-210,RSS-GEN	PASS

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	REACH Tech (Xiamen) Co., Ltd.
Address of Applicant:	RM.303,#18,Guanri Road, Software Park II, Xiamen,361008, China
Manufacturer:	REACH Tech (Xiamen) Co., Ltd.
Address of Manufacturer:	RM.303,#18,Guanri Road, Software Park II, Xiamen,361008,China
Factory:	REACH Tech (Xiamen) Co., Ltd.
Address of Factory:	5/F,#51,Wanghai Road, Software Park II,Xiamen,361008, China

5.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	R55
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20))
Channel numbers:	11 for 802.11b/802.11g/802.11(H20)
Channel separation:	5MHz
Modulation technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	Internal Antenna
Antenna gain:	-0.33 dBi
AC adapter:	Model:SKL-5WU-U050-0700 Input:100-240V AC,50/60Hz 150mA Output:5.0V DC MAX700mA
Power supply:	Rechargeable Li-ion Battery DC3.7V-2100mAh

Operation Frequency each of channel For 802.11b/g/n(H20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/802.11g/802.11n (H20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

5.3 Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Operation mode	Keep the EUT in continuous transmitting with modulation
The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
Final Test Mode:	
According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20). Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.	

5.4 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 817957, February 27, 2012.

● **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.5 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282

Fax: +86-755-23116366

5.6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	June 09 2013	June 08 2014
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	May 25 2013	May 24 2014
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 25 2013	May 24 2014
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
5	Coaxial Cable	CCIS	N/A	CCIS0016	Feb. 01 2014	Jan. 31 2015
6	Coaxial Cable	CCIS	N/A	CCIS0017	Feb. 01 2014	Jan. 31 2015
7	Coaxial cable	CCIS	N/A	CCIS0018	Feb. 01 2014	Jan. 31 2015
8	Coaxial Cable	CCIS	N/A	CCIS0019	Feb. 01 2014	Jan. 31 2015
9	Coaxial Cable	CCIS	N/A	CCIS0087	Feb. 01 2014	Jan. 31 2015
10	Amplifier(10kHz-1.3GHz)	HP	8447D	CCIS0003	Feb. 01 2014	Feb. 31 2015
11	Amplifier(1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	June 09 2013	June 08 2014
12	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Feb. 01 2014	Jan. 31 2015
13	Horn Antenna	ETS-LINDGREN	3160	GTS217	Feb. 30 2014	Feb. 29 2014
14	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
15	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
16	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	May. 25 2013	May. 24 2014
17	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Feb 01 2014	Feb. 31 2015
18	Loop antenna	Laplace instrument	RF300	EMC0701	Aug. 12 2013	Aug. 11 2014
19	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	May. 25 2013	May. 24 2014
20	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	May. 25 2013	May. 24 2014

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2013	June 08 2014
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	May 25 2013	May 24 2014
3	LISN	CHASE	MN2050D	CCIS0074	Feb 01 2014	Jan. 31 2015
4	Coaxial Cable	CCIS	N/A	CCIS0086	Feb. 01 2014	Jan. 31 2015
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

6 Test results and Measurement Data

6.1 Antenna requirement:

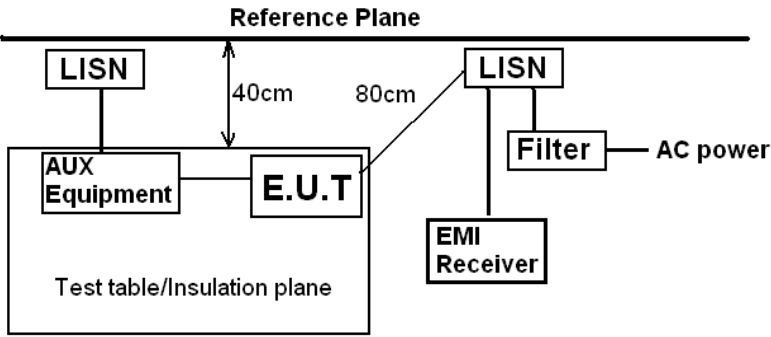
Standard requirement:	FCC Part15 C Section 15.203 /247(c) RSS Gen section 7.1.2
1. 15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi. 2. RSS Gen section 7.1.2 A transmitter can only be sold or operated with antennas with which it was approved. Transmitter may be approved with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest gain antenna of each combination of transmitter and antenna type for which approval is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type having equal or lesser gain as an antenna that had been successfully tested with the transmitter, will also be considered approved with the transmitter, and may be used and marketed with the transmitter. For Category I transmitters, the manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter. When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. For transmitters of RF output power of 10 milliwatts or less, only the portion of the antenna gain that is in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power to demonstrate compliance with the radiated power limits specified in the applicable standard. For transmitters of output power greater than 10 milliwatts, the total antenna gain shall be added to the measured RF output power to demonstrate compliance to the specified radiated power limits. User manuals for transmitters shall display the following notice in a conspicuous location: Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. The above notice may be affixed to the device instead of displayed in the user manual. User manuals for transmitters equipped with detachable antennas shall also contain the following notice in a conspicuous location: This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device. Immediately following the above notice, the manufacturer shall provide a list of all antenna types approved for use with the transmitter, indicating the maximum permissible antenna gain (in dBi) and required impedance for each.	

E.U.T Antenna:

The Bluetooth antenna is an integral antenna which permanently attached, and the best case gain of the antenna is -0.33 dBi.

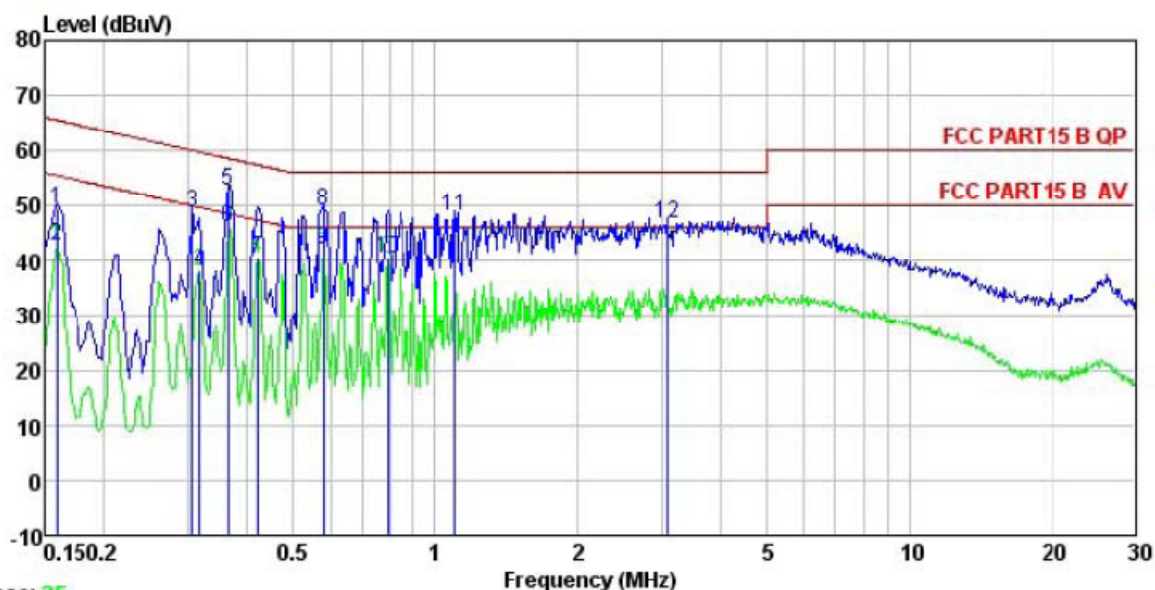


6.2 Conducted Emission

Test Requirement:	FCC Part15 C Section 15.207 RSS-Gen Section 7.1.4		
Test Method:	ANSI C63.4: 2003		
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9 kHz, VBW=30 kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.		
Test setup:	 <i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m		
Test Instruments:	Refer to section 5.6 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

Measurement Data

Neutral:

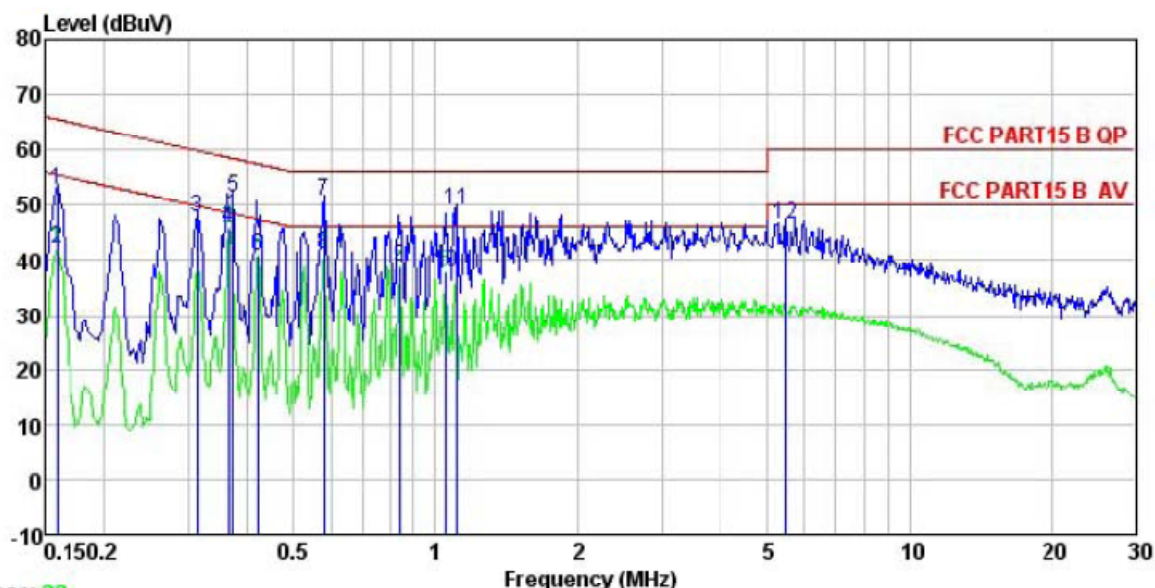


Trace: 35

Site : CCIS Conducted test Site
 Condition : FCC PART15 B QP LISN NEUTRAL
 Job No. : 154RF
 EUT : Smart Phone
 Model : R55
 Test Mode : WIFI Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: A-bomb
 Remark :

	Freq	Read	LISN	Cable	Level	Limit	Over	
	MHz	dBuV	Factor	Loss	dBuV	dBuV	Limit	Remark
			dB	dB			dB	
1	0.158	38.41	0.25	10.78	49.44	65.56	-16.12	QP
2	0.158	31.79	0.25	10.78	42.82	55.56	-12.74	Average
3	0.307	37.74	0.26	10.74	48.74	60.06	-11.32	QP
4	0.318	27.07	0.26	10.74	38.07	49.75	-11.68	Average
5	0.365	41.85	0.25	10.73	52.83	58.61	-5.78	QP
6	0.365	35.09	0.25	10.73	46.07	48.61	-2.54	Average
7	0.421	29.53	0.26	10.73	40.52	47.42	-6.90	Average
8	0.579	38.25	0.24	10.77	49.26	56.00	-6.74	QP
9	0.579	31.22	0.24	10.77	42.23	46.00	-3.77	Average
10	0.792	29.54	0.19	10.81	40.54	46.00	-5.46	Average
11	1.100	37.02	0.23	10.88	48.13	56.00	-7.87	QP
12	3.074	35.65	0.29	10.92	46.86	56.00	-9.14	QP

Line:



Trace: 33

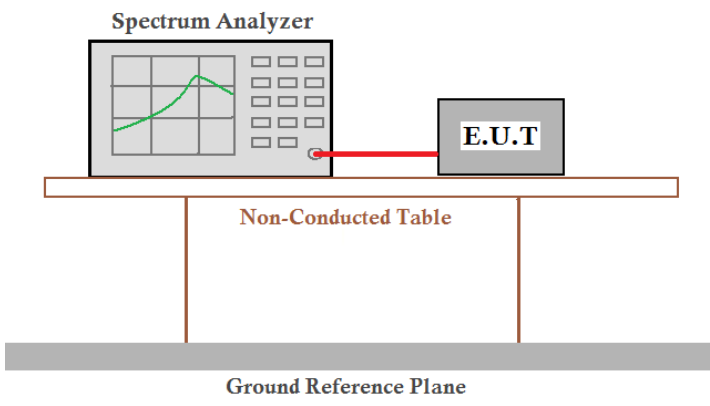
Site : CCIS Conducted test Site
 Condition : FCC PART15 B QP LISN LINE
 Job No. : 154RF
 EUT : Smart Phone
 Model : R55
 Test Mode : WIFI Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: A-bomb
 Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.158	41.66	0.27	10.78	52.71	65.56	-12.85	QP
2	0.158	31.11	0.27	10.78	42.16	55.56	-13.40	Average
3	0.313	36.74	0.26	10.74	47.74	59.88	-12.14	QP
4	0.365	34.71	0.27	10.73	45.71	48.61	-2.90	Average
5	0.373	40.41	0.28	10.73	51.42	58.43	-7.01	QP
6	0.421	29.84	0.28	10.73	40.85	47.42	-6.57	Average
7	0.579	39.62	0.26	10.77	50.65	56.00	-5.35	QP
8	0.579	30.03	0.26	10.77	41.06	46.00	-4.94	Average
9	0.839	27.91	0.23	10.82	38.96	46.00	-7.04	Average
10	1.049	26.77	0.25	10.88	37.90	46.00	-8.10	Average
11	1.111	37.94	0.25	10.88	49.07	56.00	-6.93	QP
12	5.476	35.43	0.30	10.84	46.57	60.00	-13.43	QP

Notes:

1. An initial pre-scan was performed on the live and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

6.3 Conducted Output Power

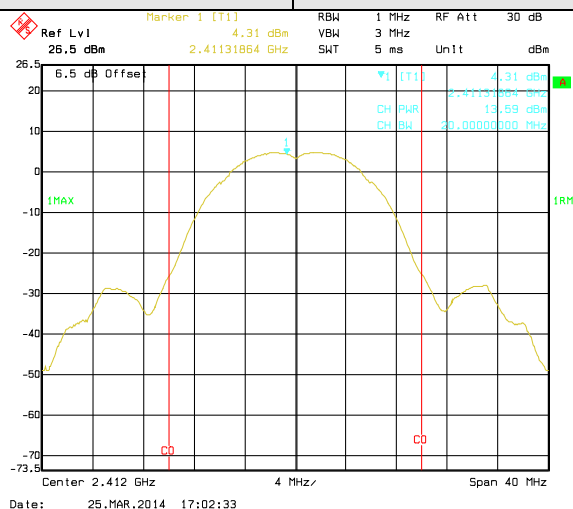
Test Requirement:	FCC Part15 C Section 15.247 (b)(3) RSS-210 A8.4 section 4
Test Method:	ANSI C63.4:2003 and KDB558074 RSS-Gen section 4.8
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	Test method refer to KDB558074 (DTS Measure Guidance) section 8.2, option 1.

Measurement Data

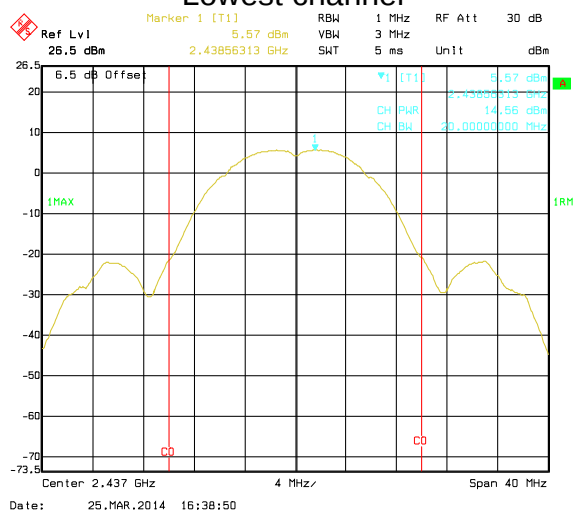
Test CH	Maximum Conducted Output Power (dBm)			Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)		
Lowest	13.59	7.87	8.16	30.00	Pass
Middle	14.56	14.35	13.29		
Highest	14.51	14.28	13.13		

Test plot as follows:

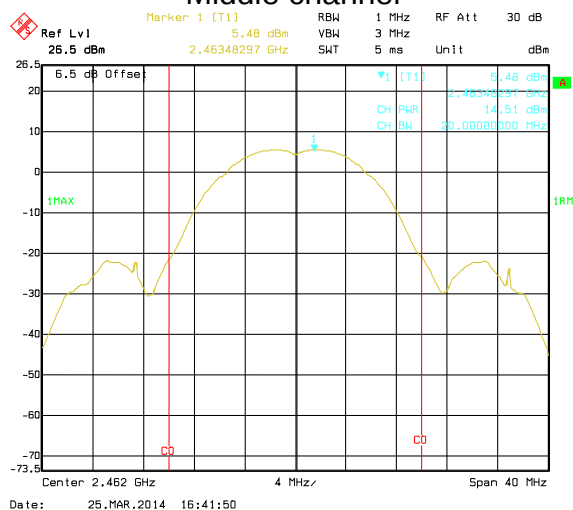
Test mode:	802.11b
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Lowest channel



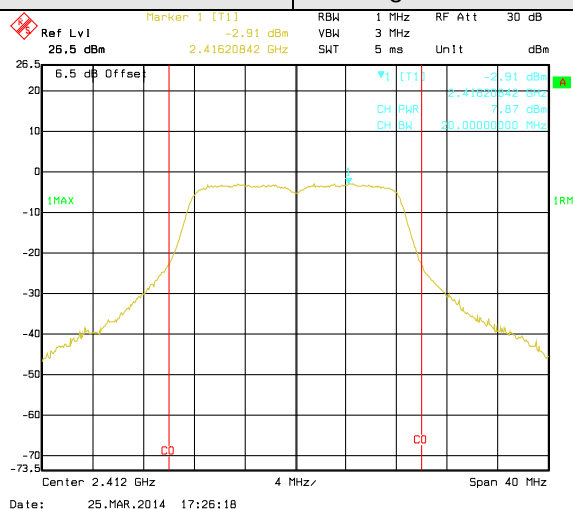
Middle channel



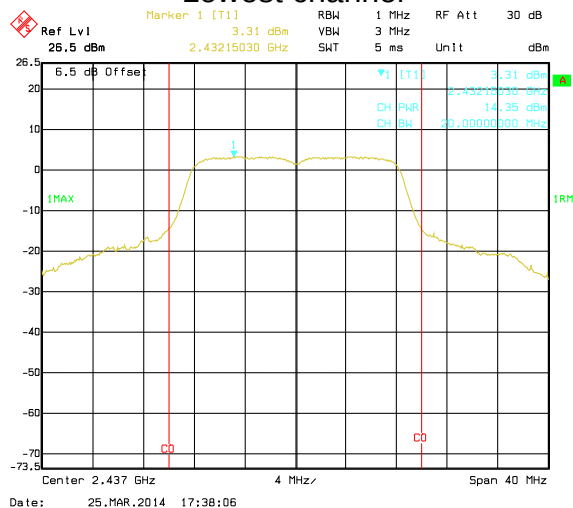
Highest channel

Test mode:

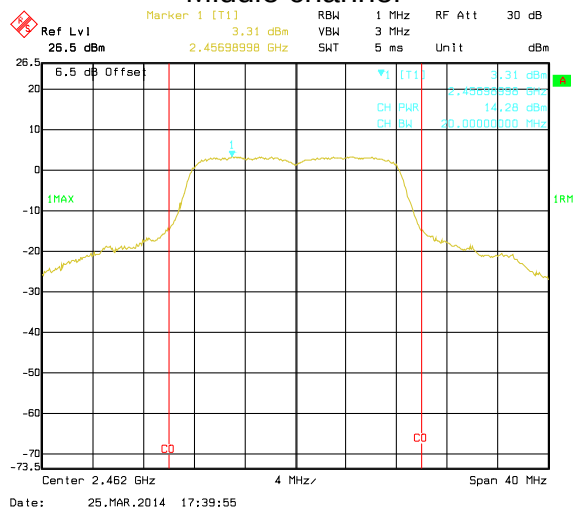
802.11g



Lowest channel

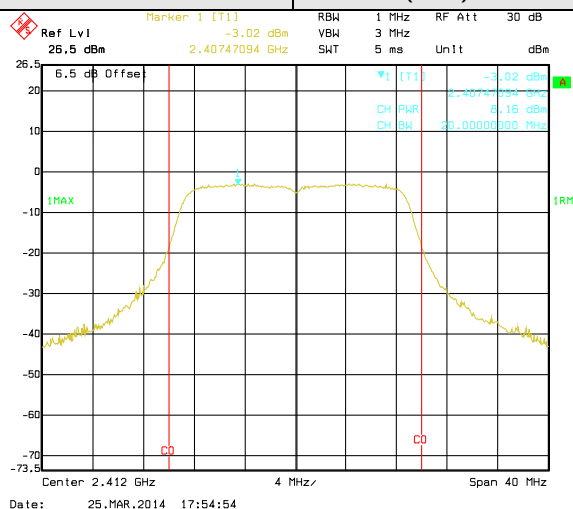


Middle channel

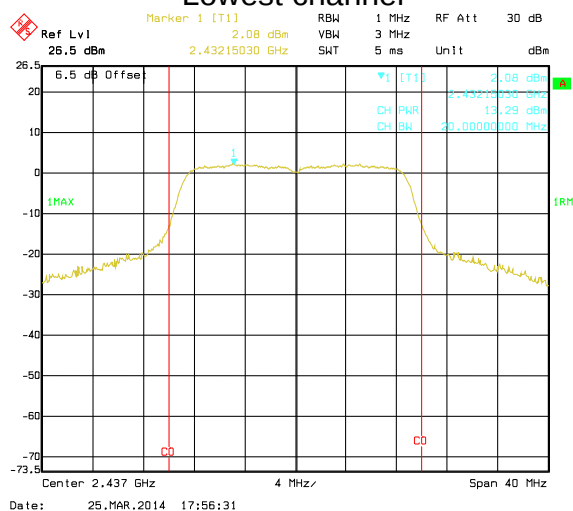


Highest channel

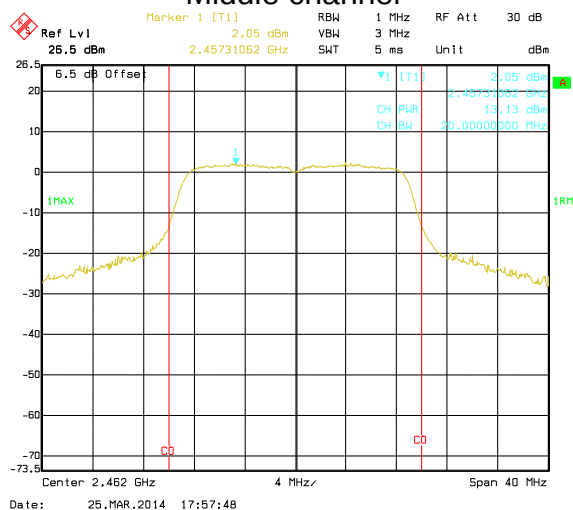
Test mode:	802.11n(H20)
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Lowest channel

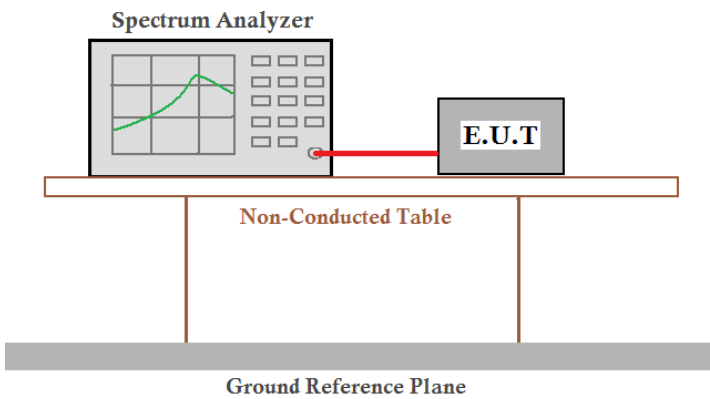


Middle channel



Highest channel

6.4 Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2) RSS-210 section A8.2(a)
Test Method:	ANSI C63.4:2003 and KDB558074 RSS-Gen section 4.6.2
Limit:	>500kHz
Test setup:	
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

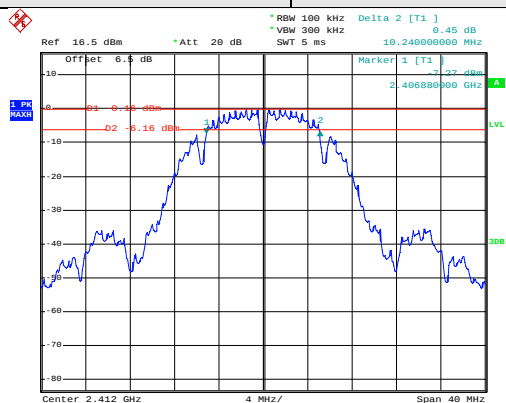
Measurement Data

Test CH	6dB Emission Bandwidth (MHz)			Limit(kHz)	Result
	802.11b	802.11g	802.11n(H20)		
Lowest	10.24	16.48	17.76	>500	Pass
Middle	10.32	16.48	17.76		
Highest	10.24	16.48	17.76		

Test CH	99% Occupy Bandwidth (MHz)			Limit(kHz)	Result
	802.11b	802.11g	802.11n(H20)		
Lowest	14.16	16.48	17.68	N/A	N/A
Middle	14.00	16.72	17.84		
Highest	14.00	16.72	17.84		

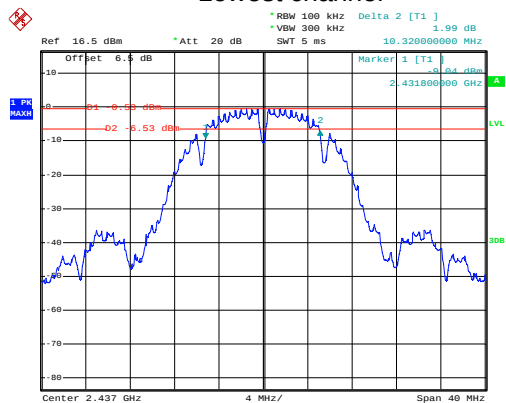
Test plot as follows:

Test mode:6dB OBW	802.11b
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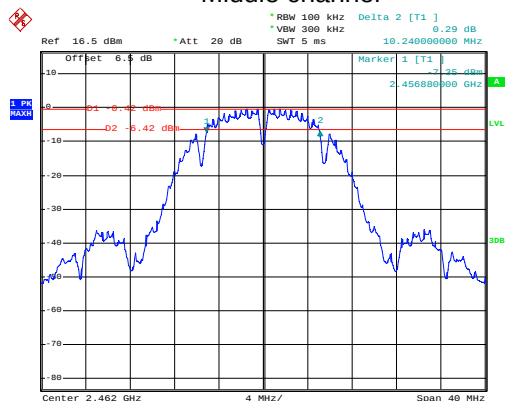
Date: 27.MAR.2014 15:12:25

Lowest channel



Date: 27.MAR.2014 15:14:57

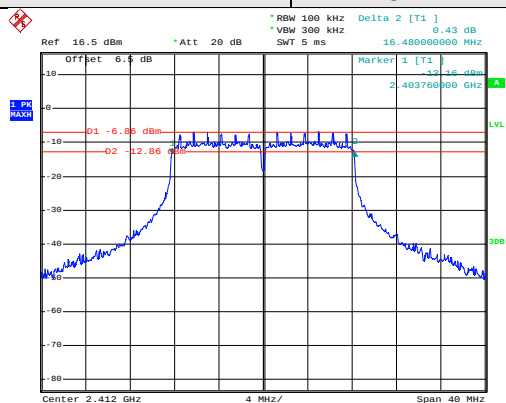
Middle channel



Date: 27.MAR.2014 15:16:24

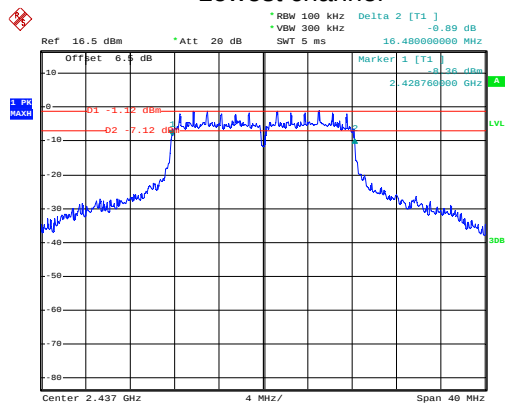
Highest channel

Test mode:6dB OBW	802.11g
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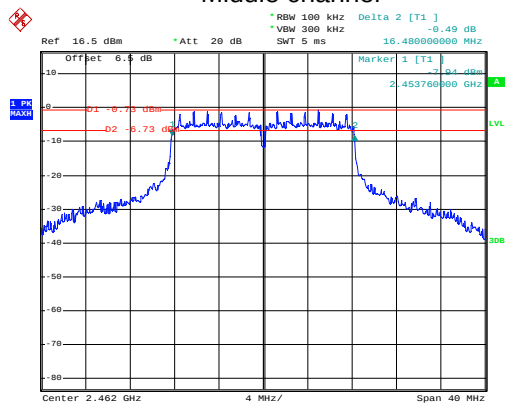
Date: 27.MAR.2014 15:24:47

Lowest channel



Date: 27.MAR.2014 15:20:28

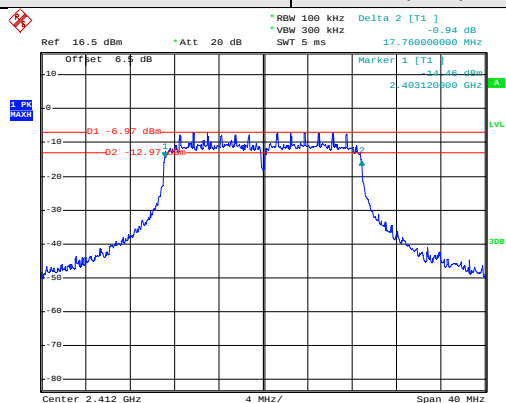
Middle channel



Date: 27.MAR.2014 15:18:11

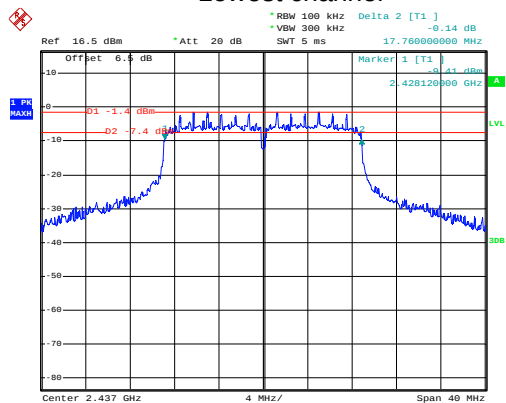
Highest channel

Test mode:6dB OBW	802.11n(H20)
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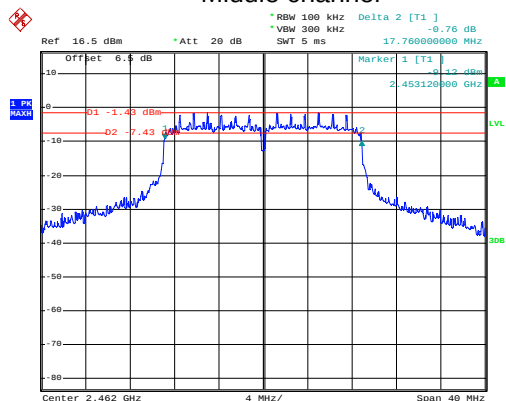
Date: 27.MAR.2014 15:27:12

Lowest channel



Date: 27.MAR.2014 15:29:57

Middle channel

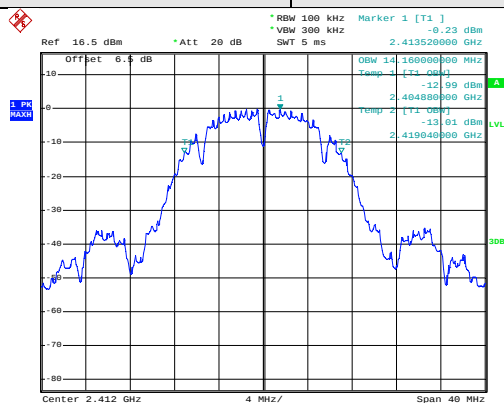


Date: 27.MAR.2014 15:31:38

Highest channel

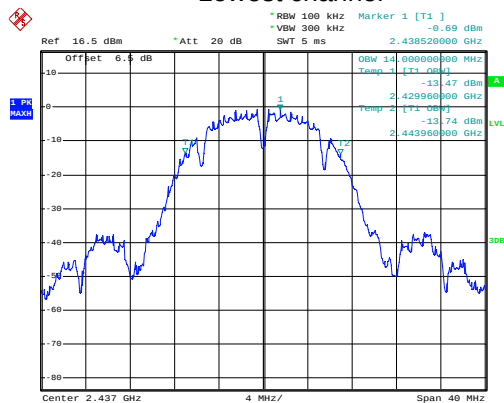
Test mode:99% OBW

802.11b



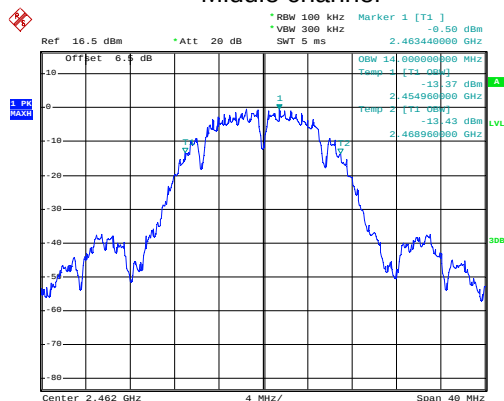
Date: 27.MAR.2014 14:53:52

Lowest channel



Date: 27.MAR.2014 14:55:24

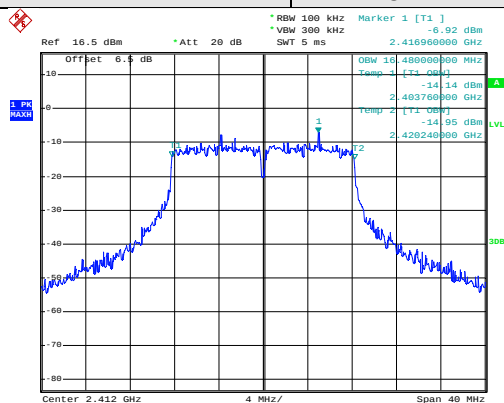
Middle channel



Date: 27.MAR.2014 14:56:56

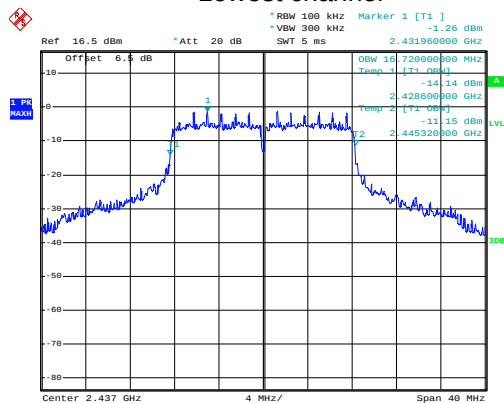
Highest channel

Test mode: 99% OBW	802.11g
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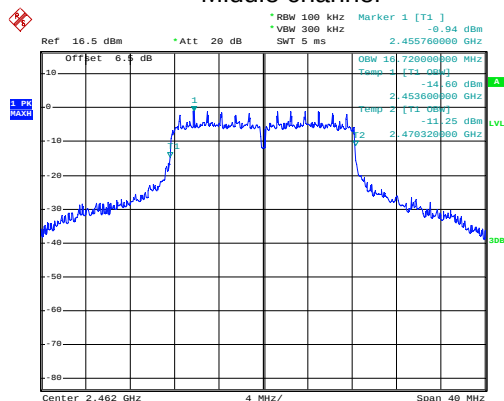
Date: 27.MAR.2014 15:01:17

Lowest channel



Date: 27.MAR.2014 15:09:14

Middle channel

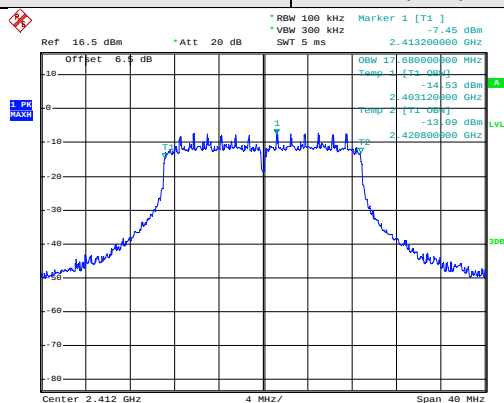


Date: 27.MAR.2014 14:58:10

Highest channel

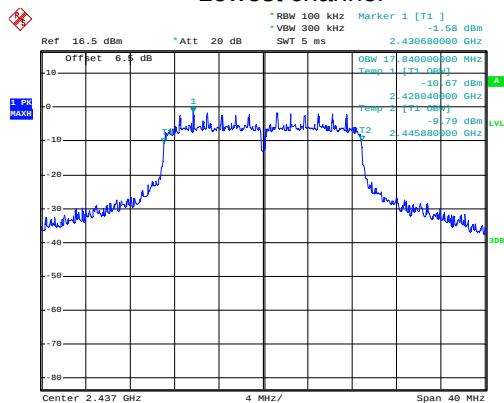
Test mode: 99% OBW

802.11n(H20)



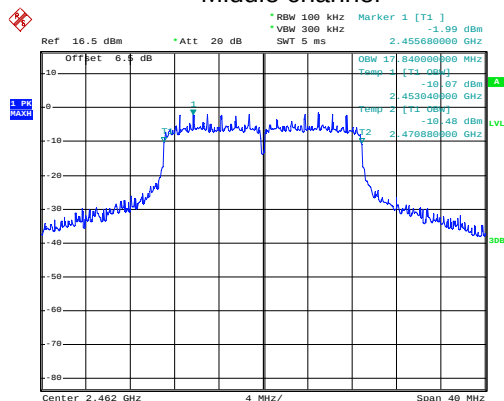
Date: 27.MAR.2014 15:02:37

Lowest channel



Date: 27.MAR.2014 15:05:25

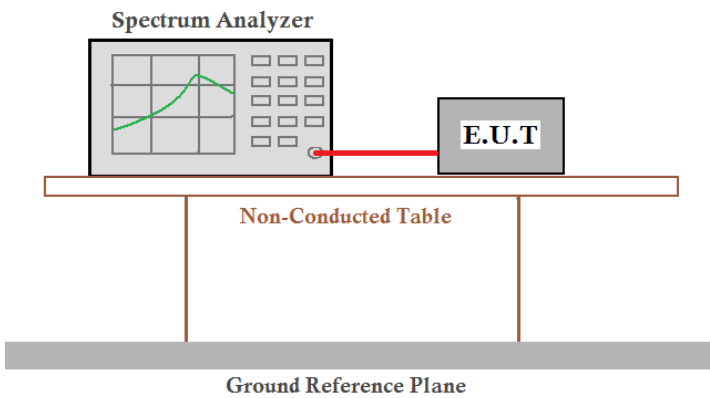
Middle channel



Date: 27.MAR.2014 15:08:00

Highest channel

6.5 Power Spectral Density

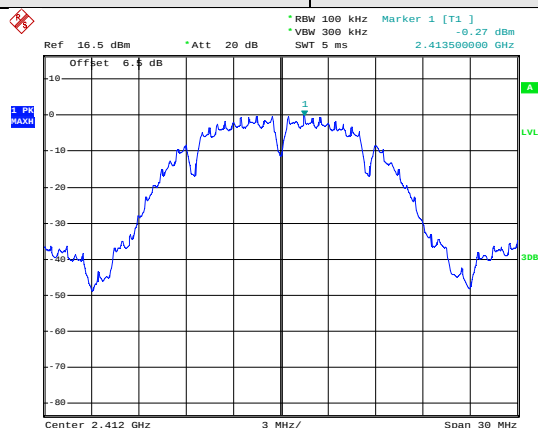
Test Requirement:	FCC Part15 C Section 15.247 (e) RSS-210 section A8.2 (b)
Test Method:	ANSI C63.4:2003 and KDB558074 RSS-210 section A8.2 (b) and KDB558074
Limit:	8dBm
Test setup:	
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Test CH	Power Spectral Density (dBm)			Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)		
Lowest	-0.27	-6.96	-6.79	8.00	Pass
Middle	-0.57	-1.10	-1.40		
Highest	-0.47	-0.73	-1.42		

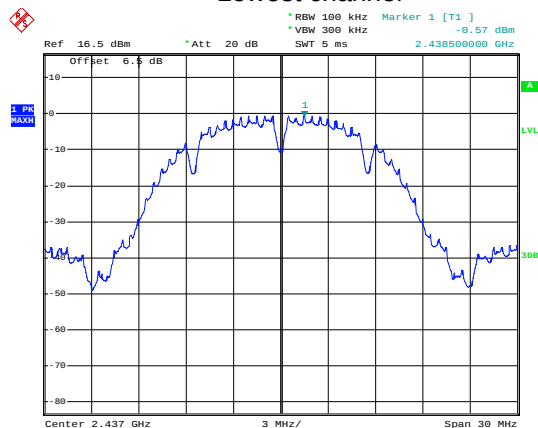
Test plot as follows:

Test mode:	802.11b
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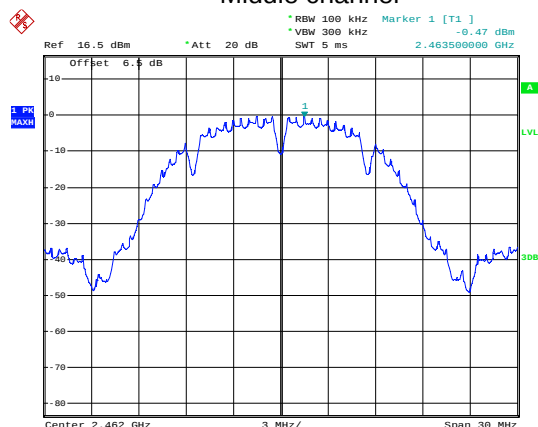
Date: 27.MAR.2014 15:49:14

Lowest channel



Date: 27.MAR.2014 15:50:30

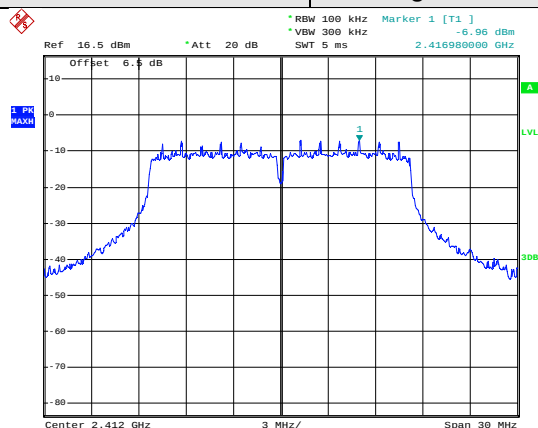
Middle channel



Date: 27.MAR.2014 15:51:35

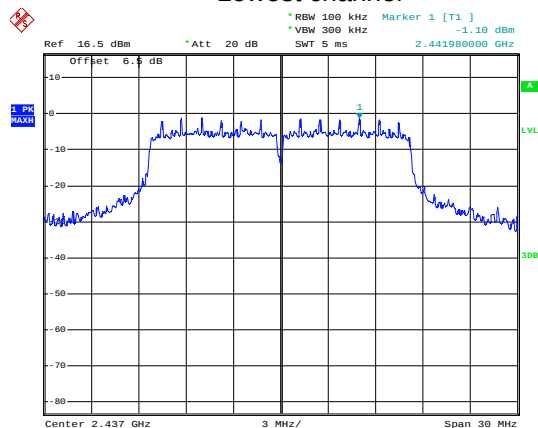
Highest channel

Test mode:	802.11g
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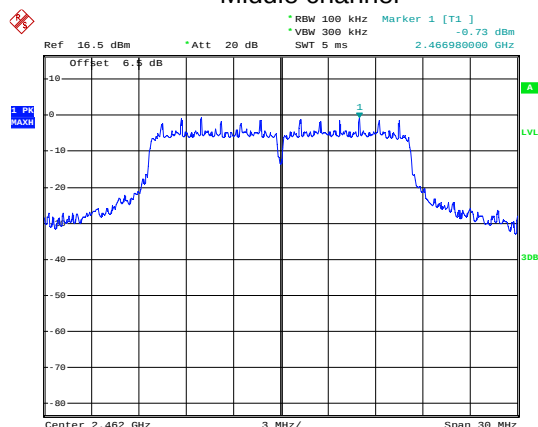
Date: 27.MAR.2014 15:56:29

Lowest channel



Date: 27.MAR.2014 15:54:17

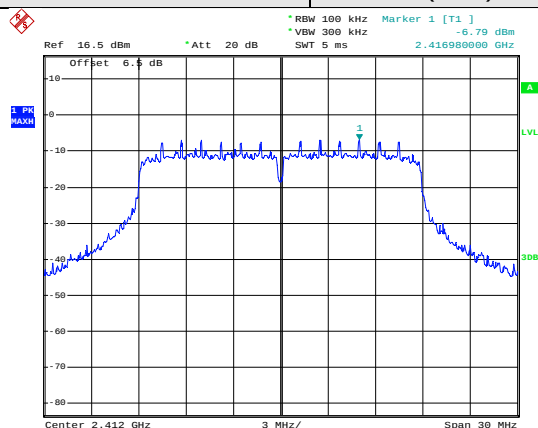
Middle channel



Date: 27.MAR.2014 15:52:47

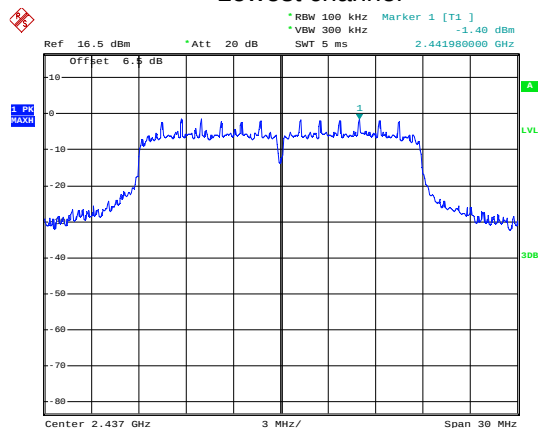
Highest channel

Test mode:	802.11n(H20)
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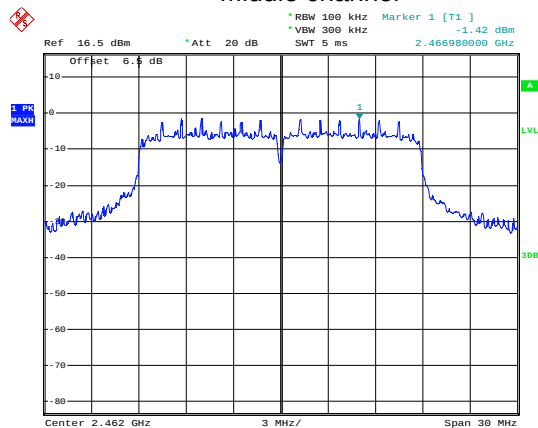
Date: 27.MAR.2014 15:58:17

Lowest channel



Date: 27.MAR.2014 16:00:01

Middle channel

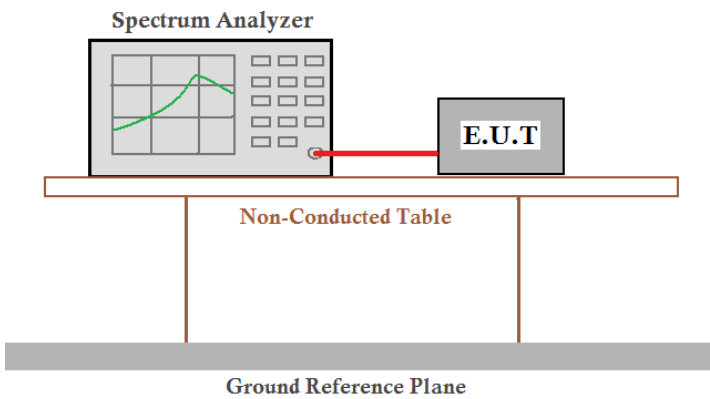


Date: 27.MAR.2014 16:01:12

Highest channel

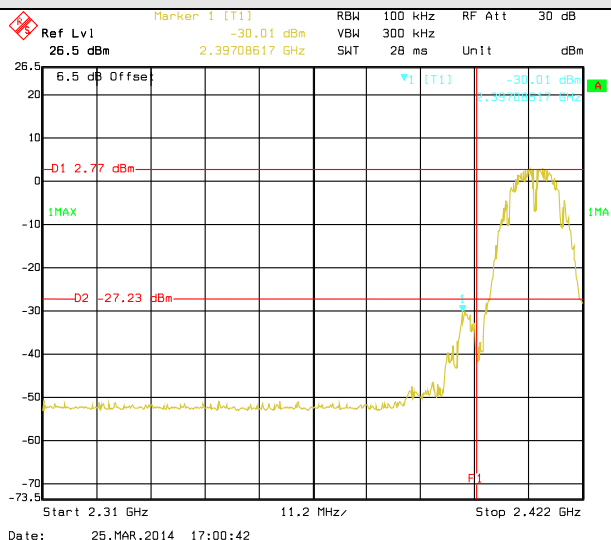
6.6 Band Edge

6.6.1 Conducted Emission Method

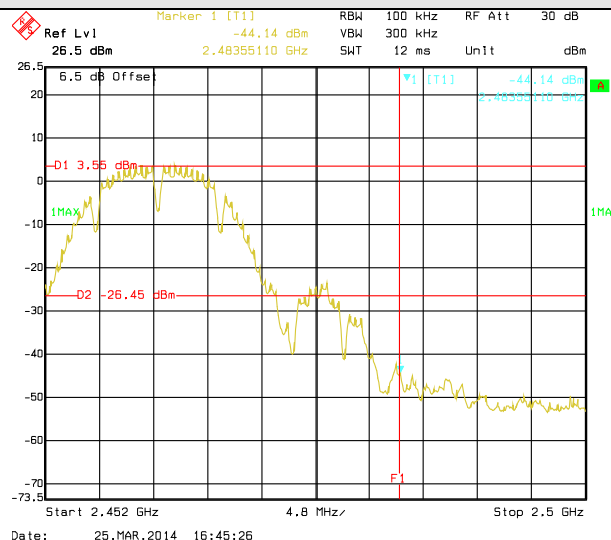
Test Requirement:	FCC Part15 C Section 15.247 (d) RSS-210 section A8.5
Test Method:	ANSI C63.4:2003 and KDB558074 RSS-210 section A8.5
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plot as follows:

Test mode: 802.11b

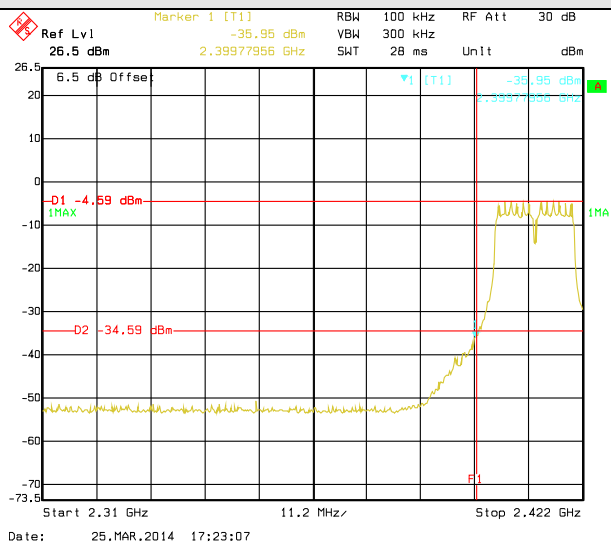


Lowest channel

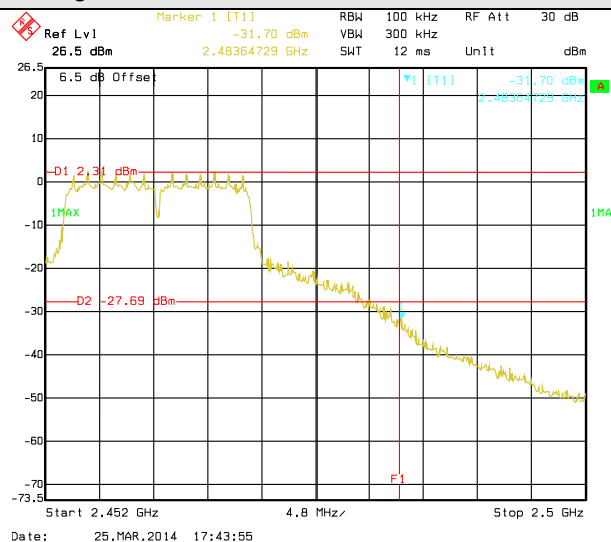


Highest channel

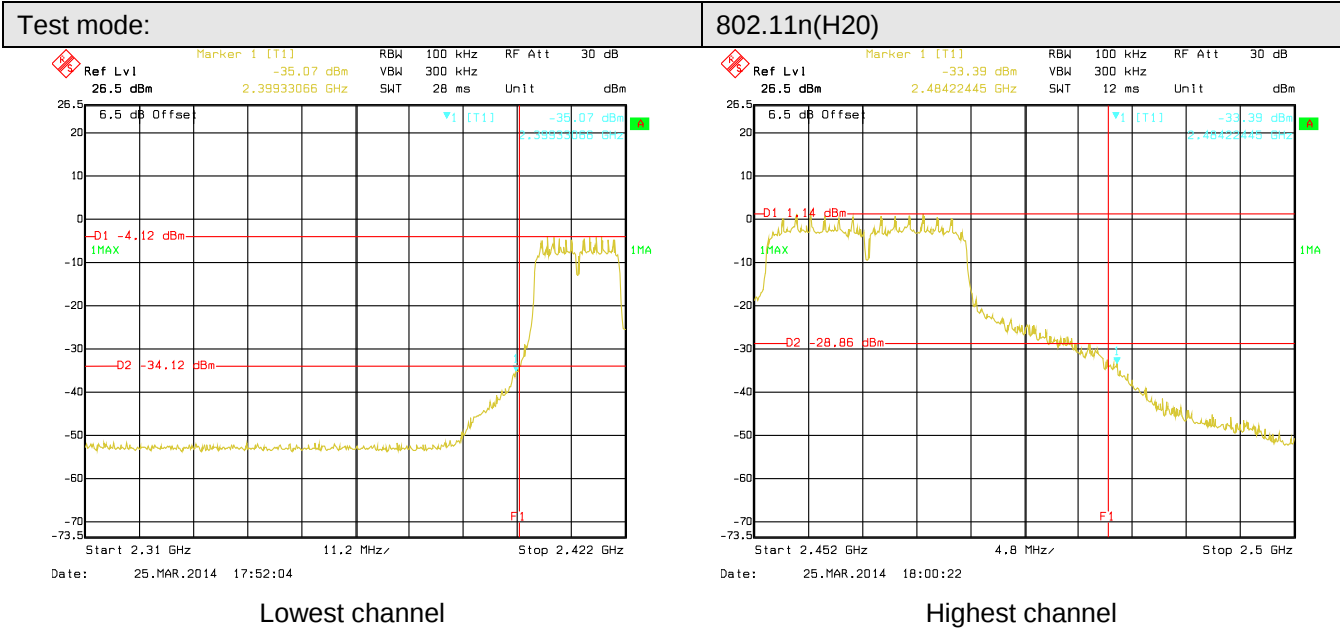
Test mode: 802.11g



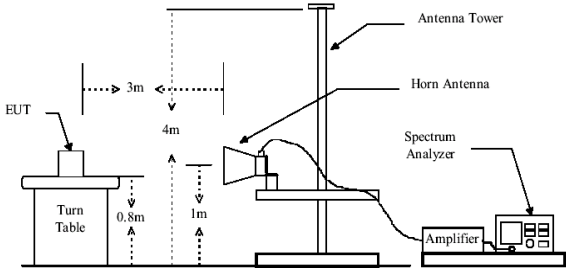
Lowest channel



Highest channel



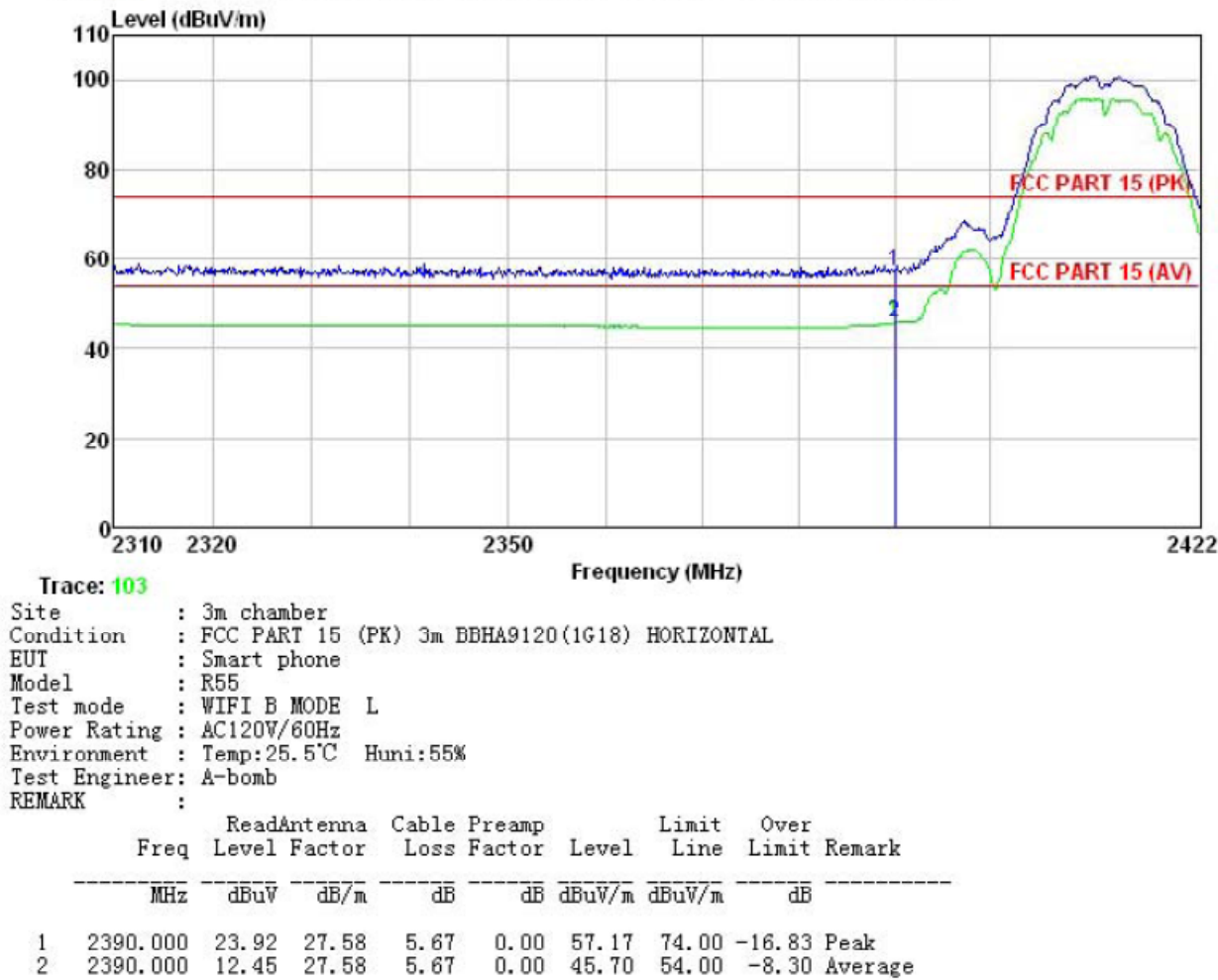
6.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205 RSS-210 section A8.5																		
Test Method:	ANSI C63.4: 2003 RSS-Gen section 4.9																		
Test Frequency Range:	2.3GHz to 2.5GHz 5.35 GHz to 5.46 GHz																		
Test site:	Measurement Distance: 3m																		
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr><tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	Above 1GHz	Peak	1MHz	3MHz	Peak Value	Peak	1MHz	10Hz	Average Value
Frequency	Detector	RBW	VBW	Remark															
Above 1GHz	Peak	1MHz	3MHz	Peak Value															
	Peak	1MHz	10Hz	Average Value															
Limit:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr><tr><td>74.00</td><td>Peak Value</td></tr></table>					Frequency	Limit (dBuV/m @3m)	Remark	Above 1GHz	54.00	Average Value	74.00	Peak Value						
Frequency	Limit (dBuV/m @3m)	Remark																	
Above 1GHz	54.00	Average Value																	
	74.00	Peak Value																	
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.																		
Test setup:																			
Test Instruments:	Refer to section 5.6 for details																		
Test mode:	Refer to section 5.3 for details																		
Test results:	Passed																		

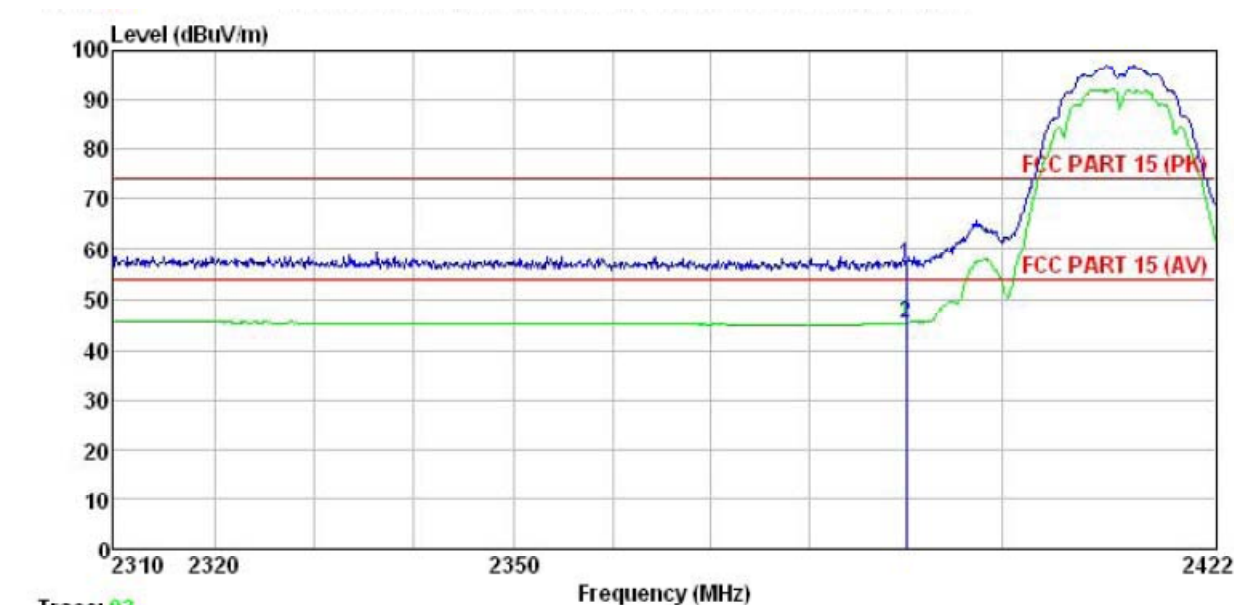
802.11b

Test channel: Lowest

Horizontal:



Vertical :

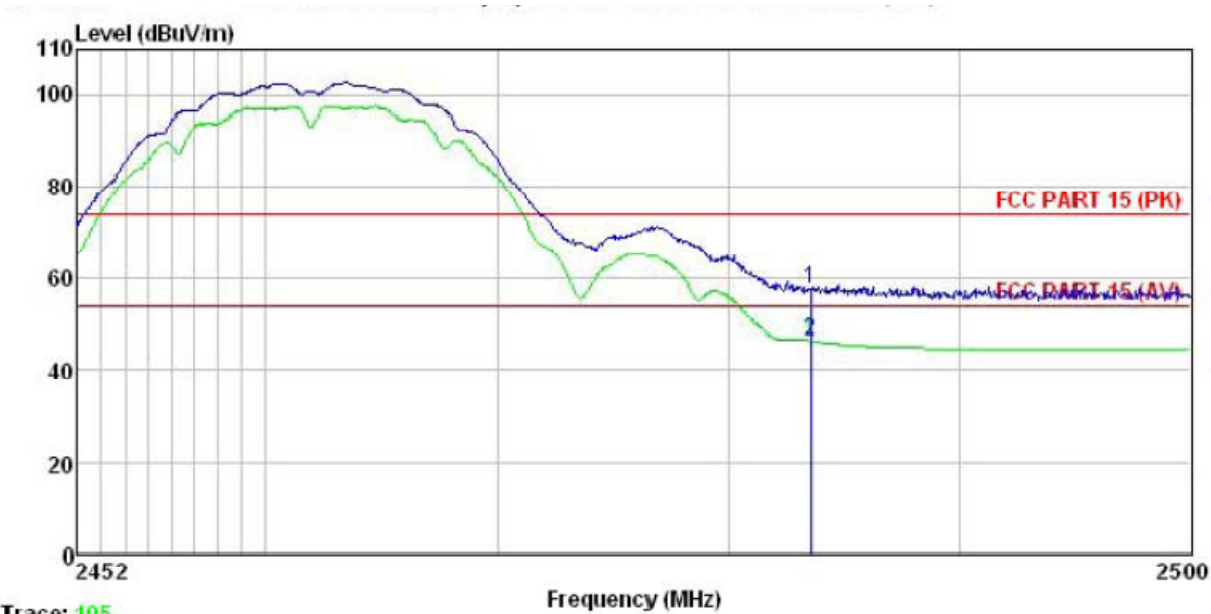


Trace: 93
Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
EUT : Smart phone
Model : R55
Test mode : WIFI B MODE L
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: A-bomb
REMARK :

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	dBuV/m	Line	Limit	Remark
		dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	23.66	27.58	5.67	0.00	56.91	74.00	-17.09	Peak
2	2390.000	11.93	27.58	5.67	0.00	45.18	54.00	-8.82	Average

Test channel: Highest

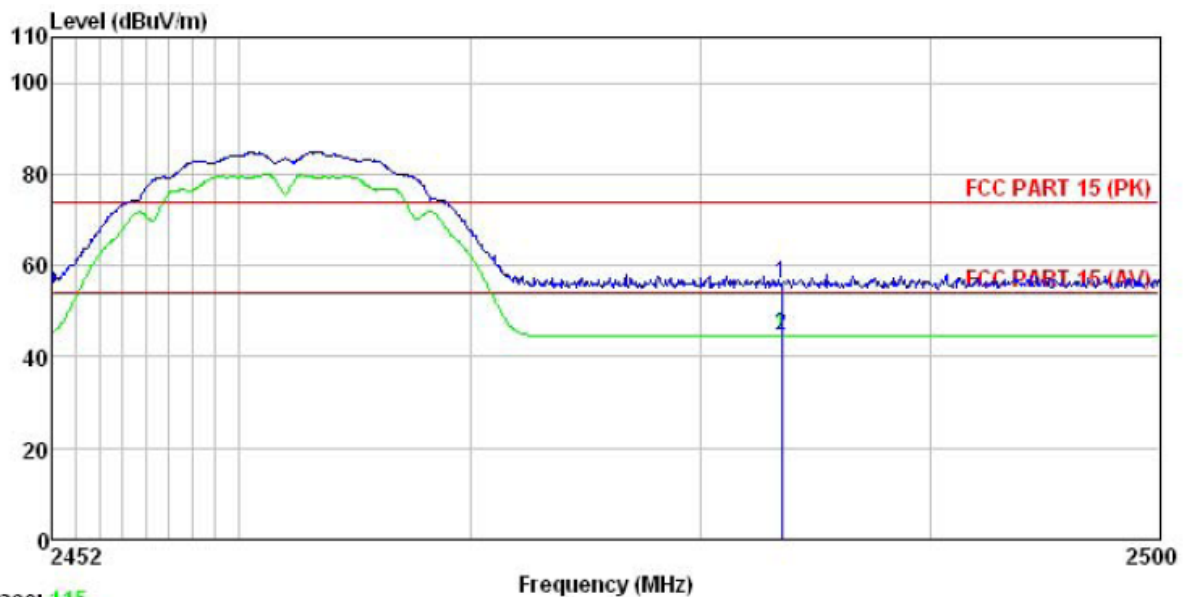
Horizontal:



Trace: 105
Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
EUT : Smart phone
Model : R55
Test mode : WIFI B MODE H
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: A-bomb
REMARK :

	Freq	ReadAntenna		Cable Preamp		Limit		Over	Remark
		Level	Factor	Loss	Factor	Level	Line		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	24.24	27.52	5.70	0.00	57.46	74.00	-16.54	Peak
2	2483.500	13.16	27.52	5.70	0.00	46.38	54.00	-7.62	Average

Vertical :



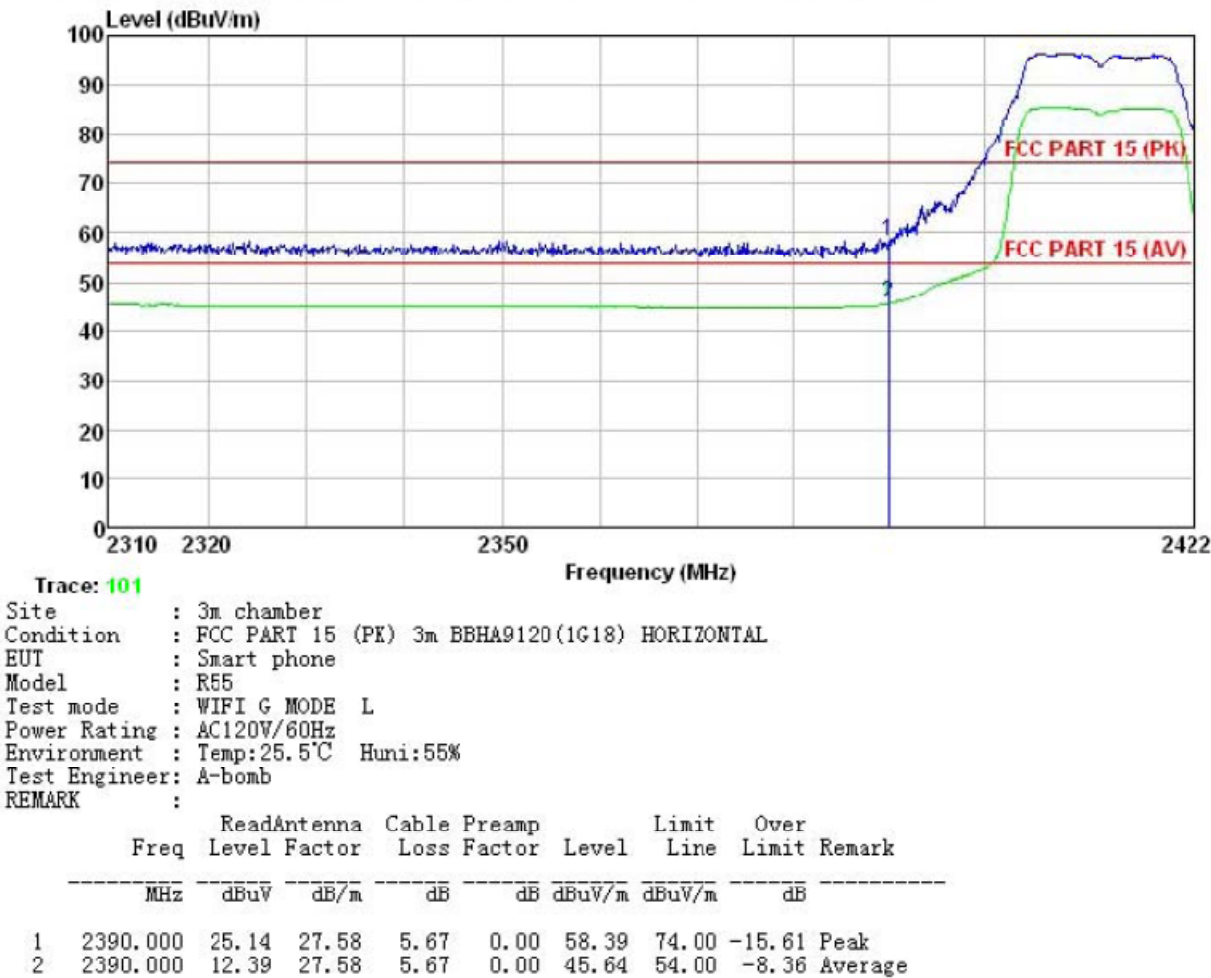
Trace: 115

Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 EUT : Smart phone
 Model : R55
 Test mode : WIFI B MODE H
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: A-bomb
 REMARK :

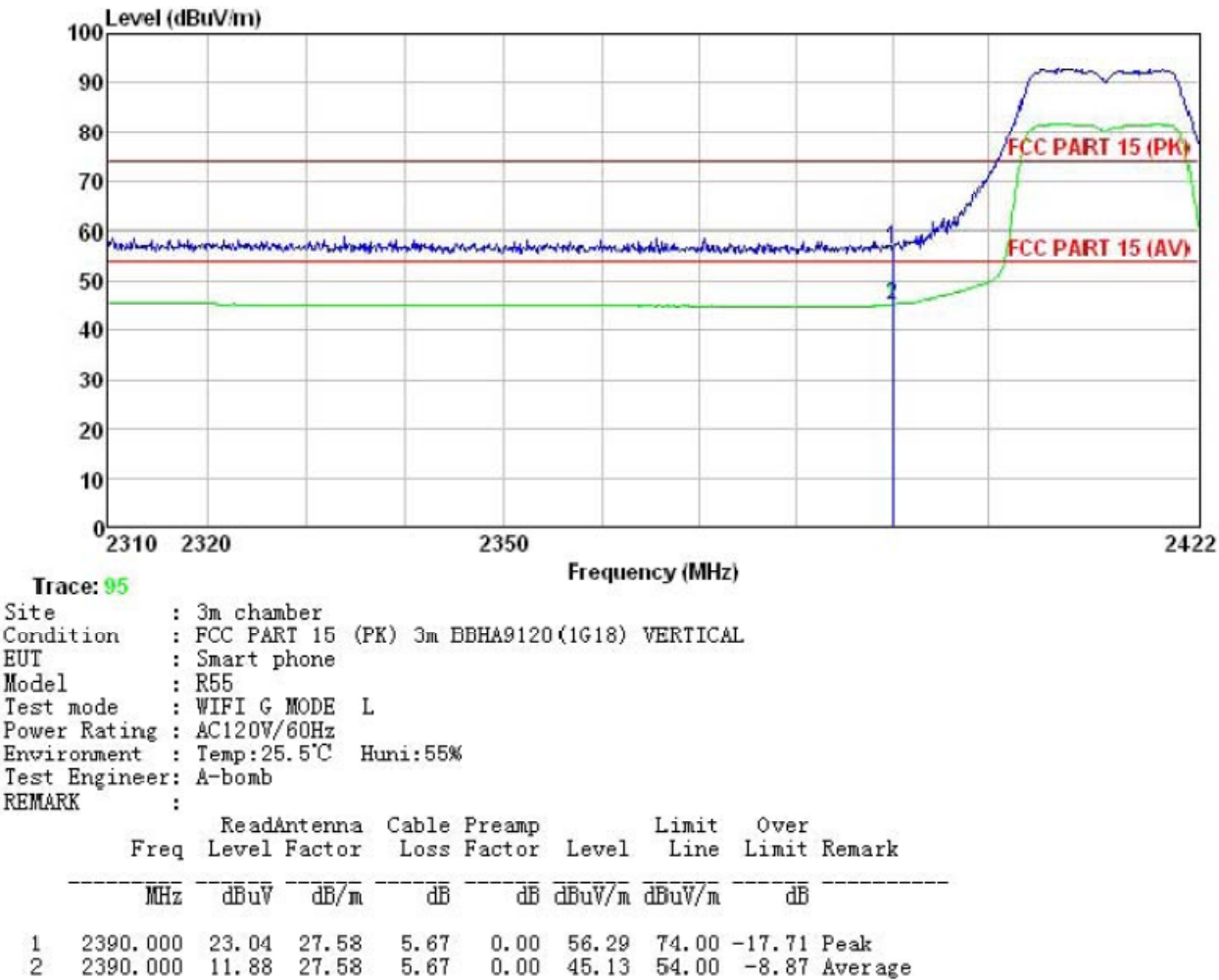
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	22.86	27.52	5.70	0.00	56.08	74.00	-17.92	Peak
2	2483.500	11.27	27.52	5.70	0.00	44.49	54.00	-9.51	Average

802.11g
Test channel: Lowest

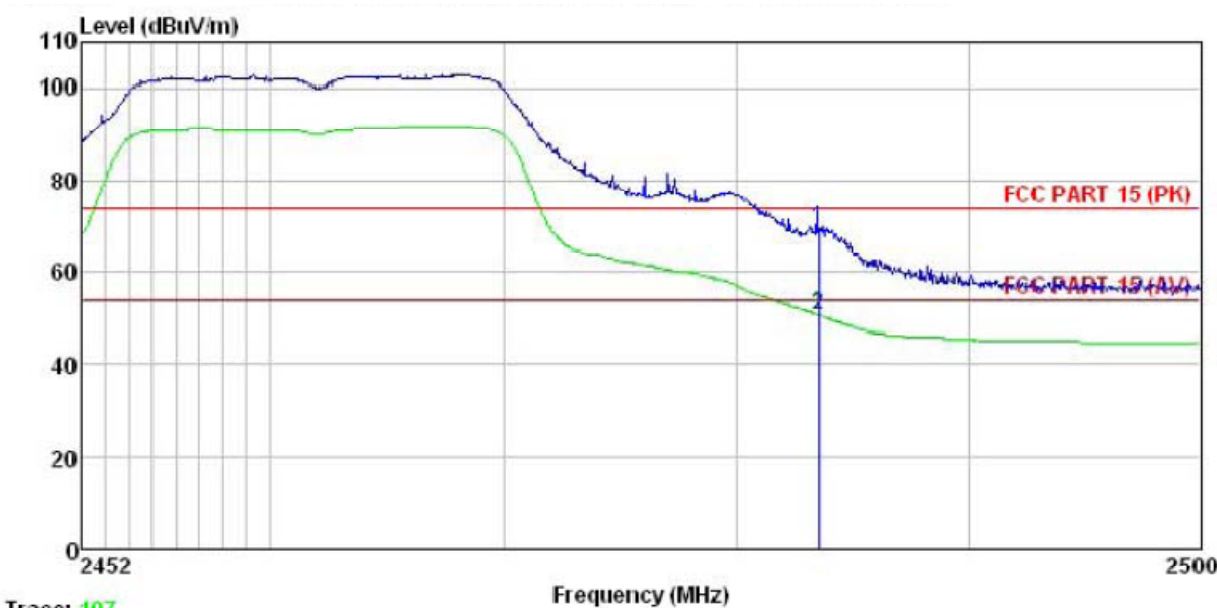
Horizontal :



Vertical :



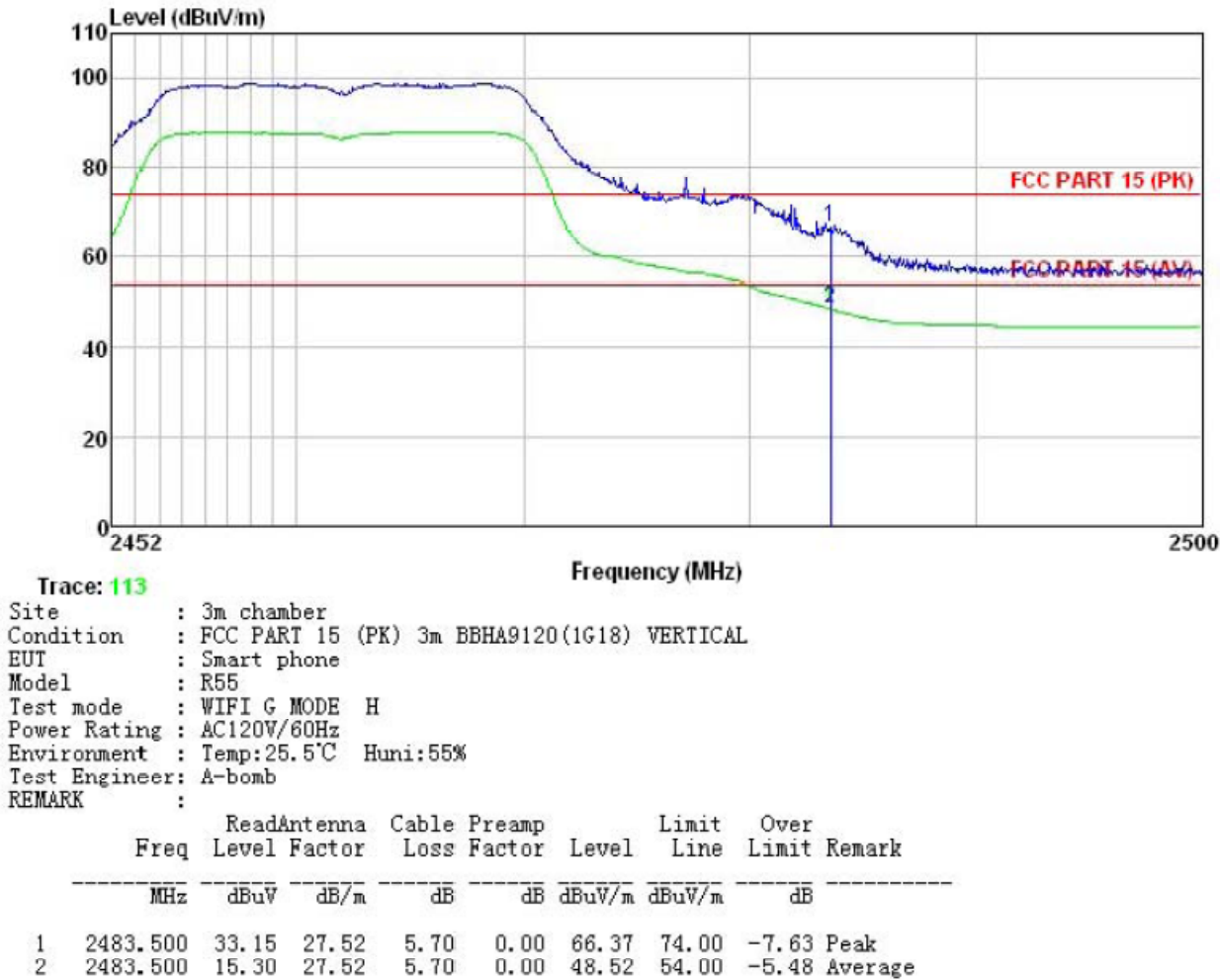
Test channel: Highest



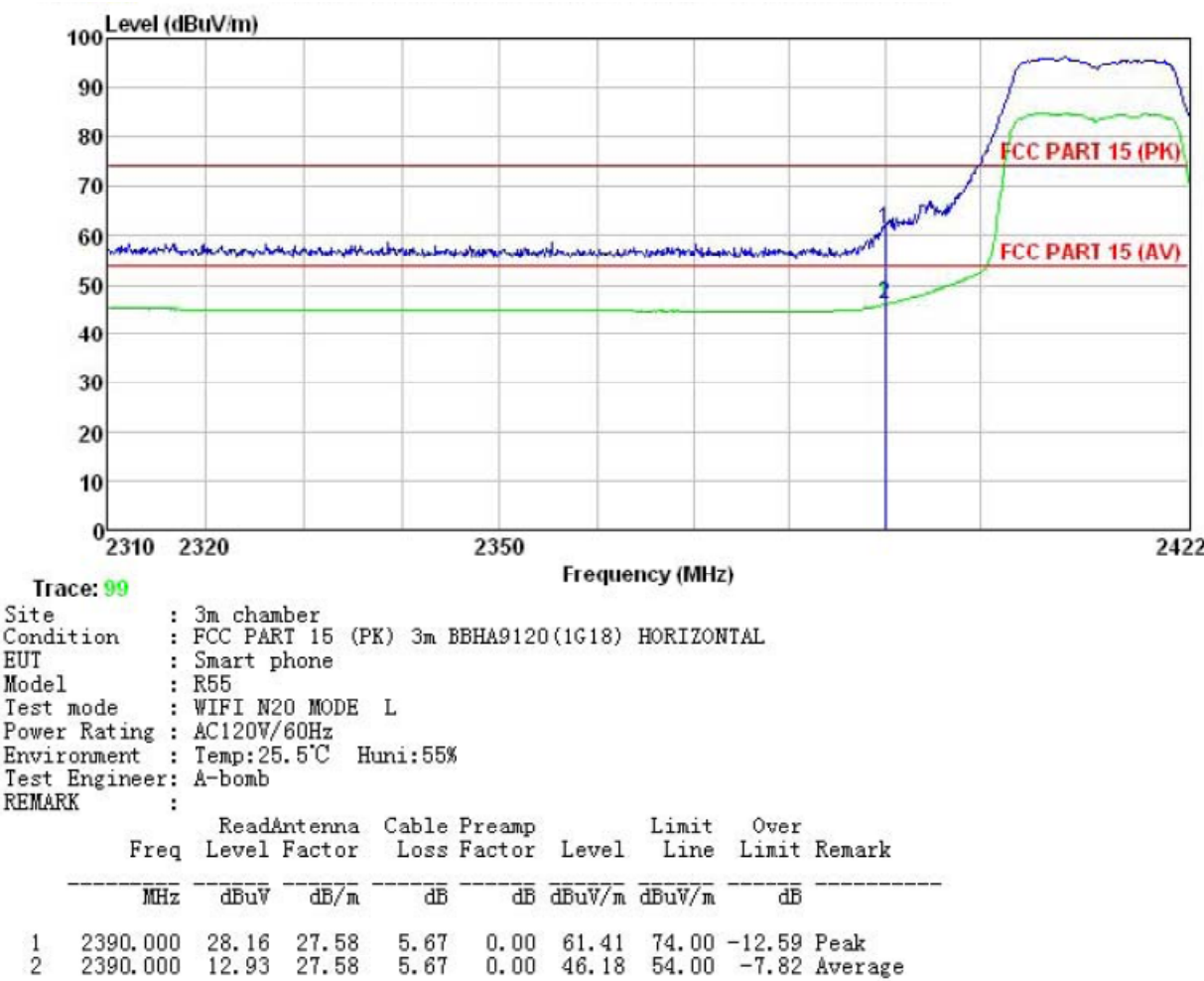
Trace: 107
Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
EUT : Smart phone
Model : R55
Test mode : WIFI G MODE H
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: A-bomb
REMARK :

	Freq	Read	Antenna	Cable		Preamp	Level	Limit	Over	Remark
		Level	Factor	Loss	Factor	Level		Line	Limit	
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	2483.500	36.02	27.52	5.70	0.00	69.24	74.00	-4.76	Peak	
2	2483.500	17.51	27.52	5.70	0.00	50.73	54.00	-3.27	Average	

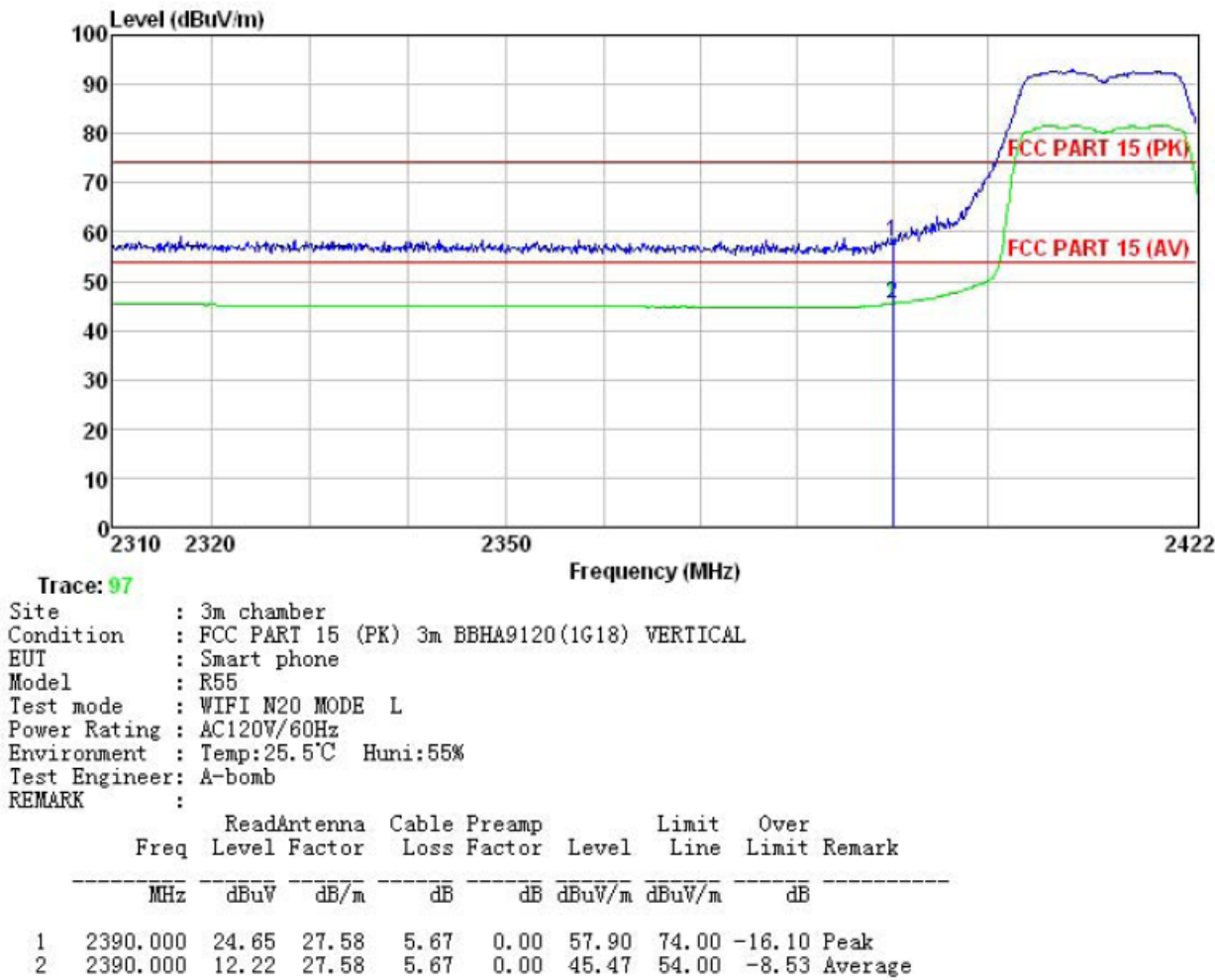
Vertical :



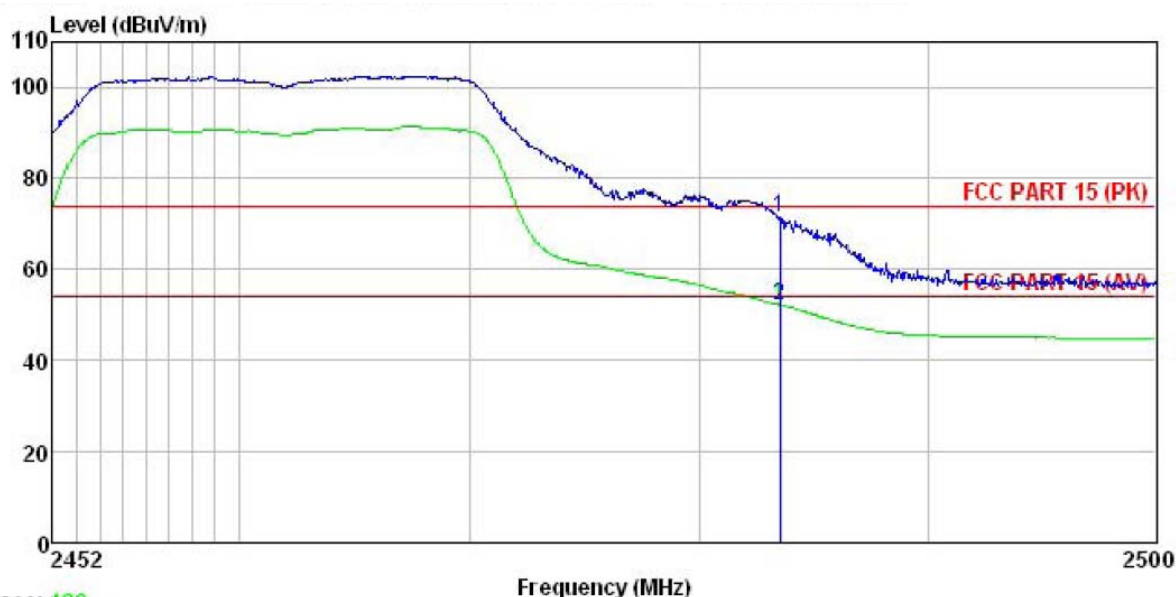
802.11n (H20)
Test channel: Lowest
Horizontal :



Vertical :



Test channel: Highest
Horizontal :

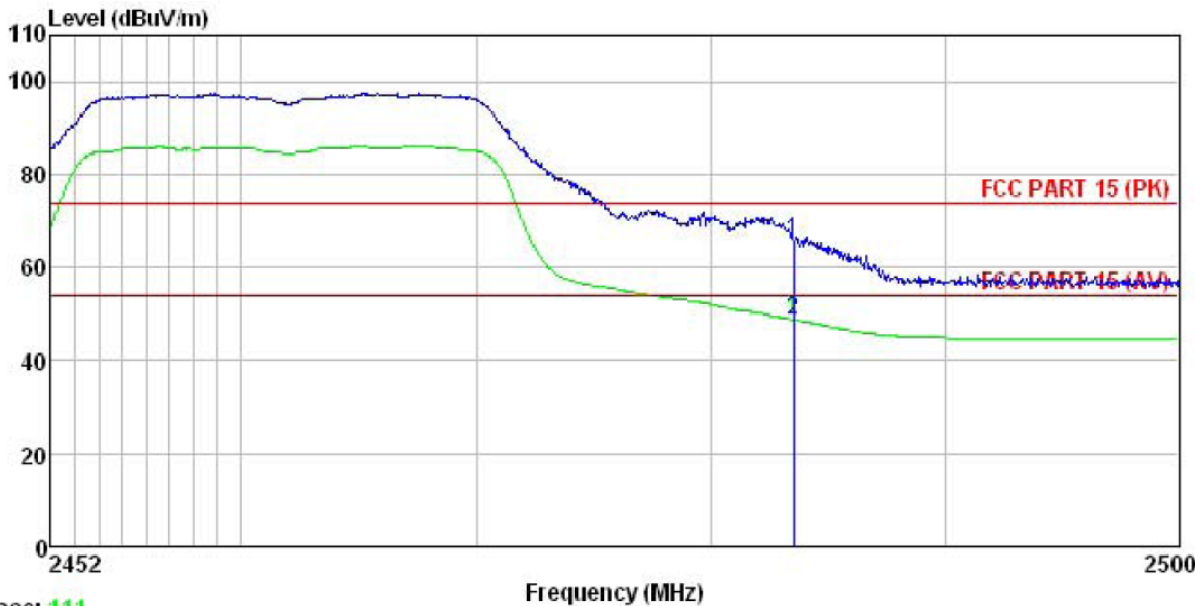


Trace: 109

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
EUT : Smart phone
Model : R55
Test mode : WIFI N20 MODE H
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: A-bomb
REMARK :

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	dBuV/m	Line	Limit	Remark
		dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	38.13	27.52	5.70	0.00	71.35	74.00	-2.65	Peak
2	2483.500	18.84	27.52	5.70	0.00	52.06	54.00	-1.94	Average

Vertical :



Trace: 111

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
EUT : Smart phone
Model : R55
Test mode : WIFI N20 MODE H
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Humi:55%
Test Engineer: A-bomb
REMARK :

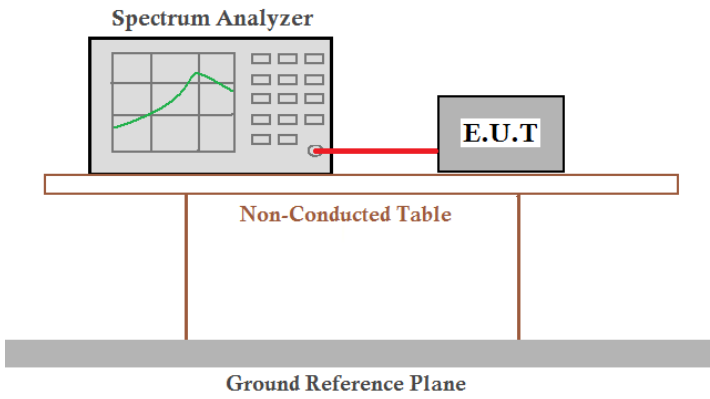
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	32.52	27.52	5.70	0.00	65.74	74.00	-8.26	Peak
2	2483.500	15.53	27.52	5.70	0.00	48.75	54.00	-5.25	Average

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

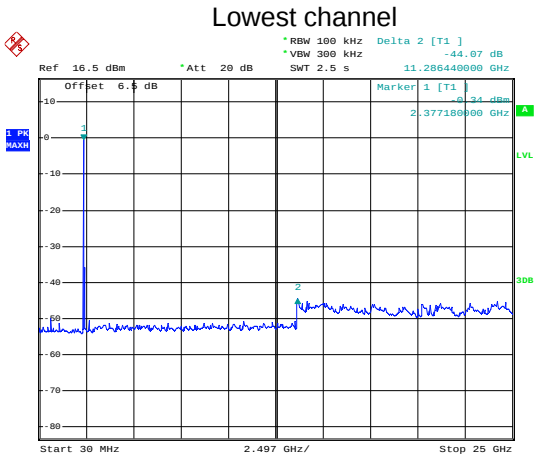
6.7 Spurious Emission

6.7.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d) RSS-210 section A8.5
Test Method:	ANSI C63.4:2003 and KDB558074 RSS-210 section A8.5
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	 The diagram illustrates the test setup for conducted emission measurement. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table, which is supported by two vertical legs. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

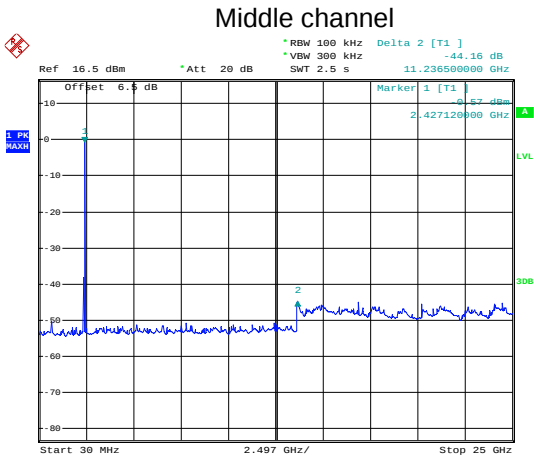
Test plot as follows:

Test mode:	802.11b
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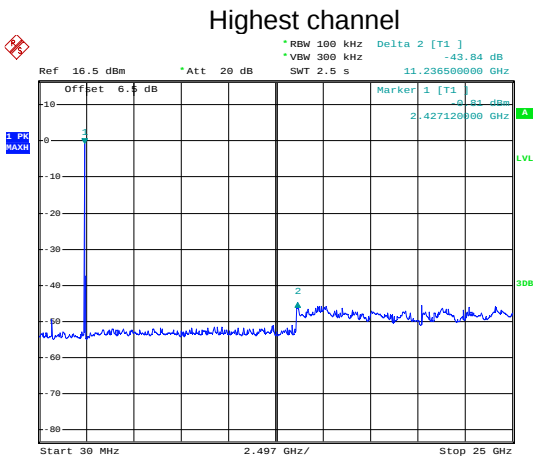
Date: 27.MAR.2014 15:46:30

30MHz~25GHz



Date: 27.MAR.2014 15:44:59

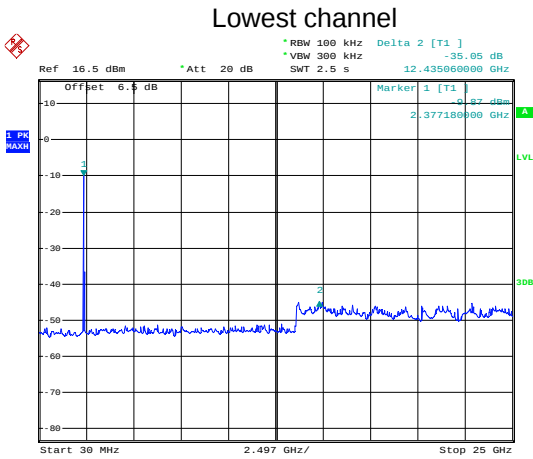
30MHz~25GHz



Date: 27.MAR.2014 15:43:21

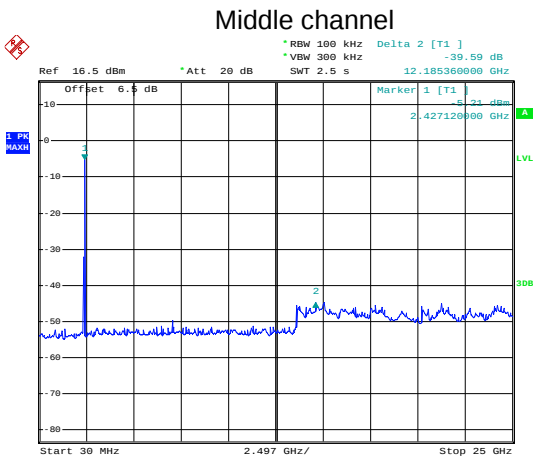
30MHz~25GHz

Test mode:	802.11g
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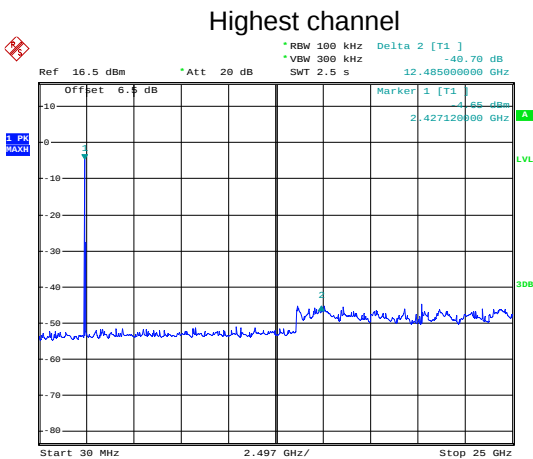
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30MHz~25GHz



Date: 27.MAR.2014 15:41:07

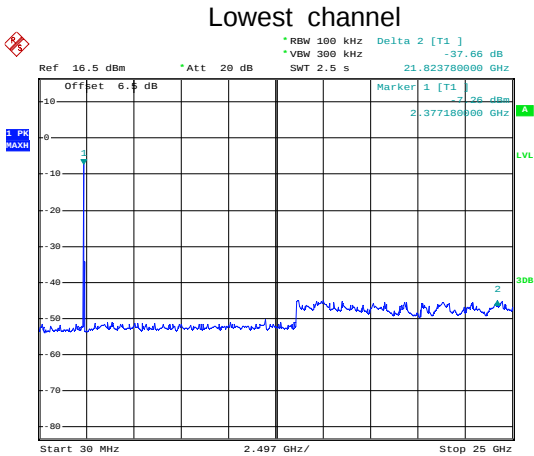
30MHz~25GHz



Date: 27.MAR.2014 15:42:08

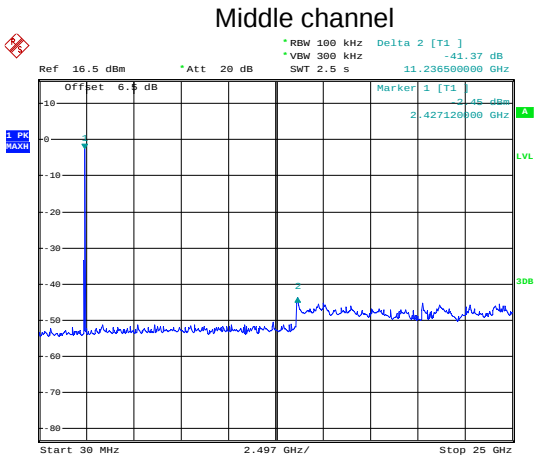
30MHz~25GHz

Test mode:	802.11n(H20)
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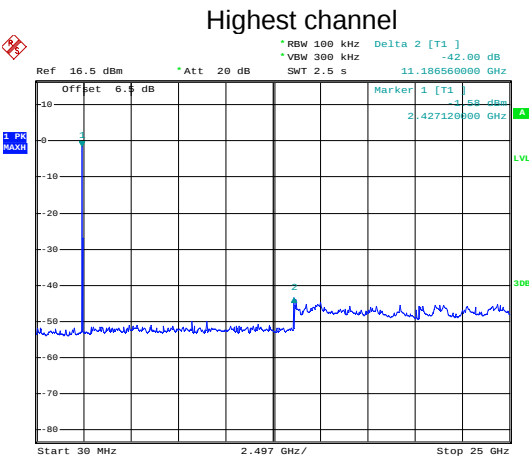
Date: 27.MAR.2014 15:37:14

30MHz~25GHz



Date: 27.MAR.2014 15:38:24

30MHz~25GHz

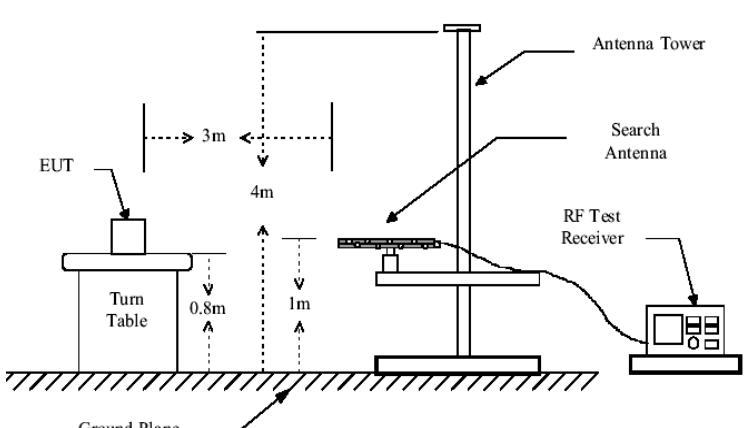
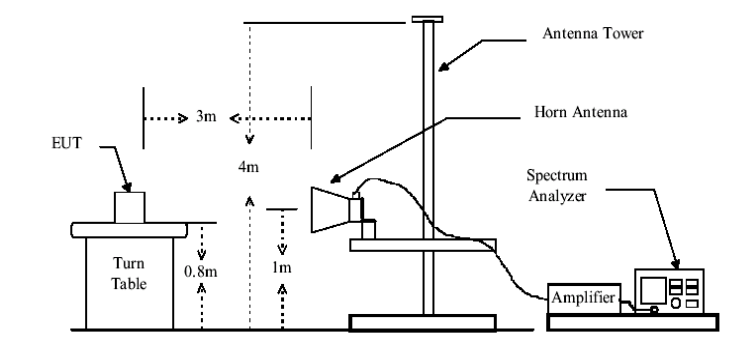


Date: 27.MAR.2014 15:34:10

30MHz~25GHz

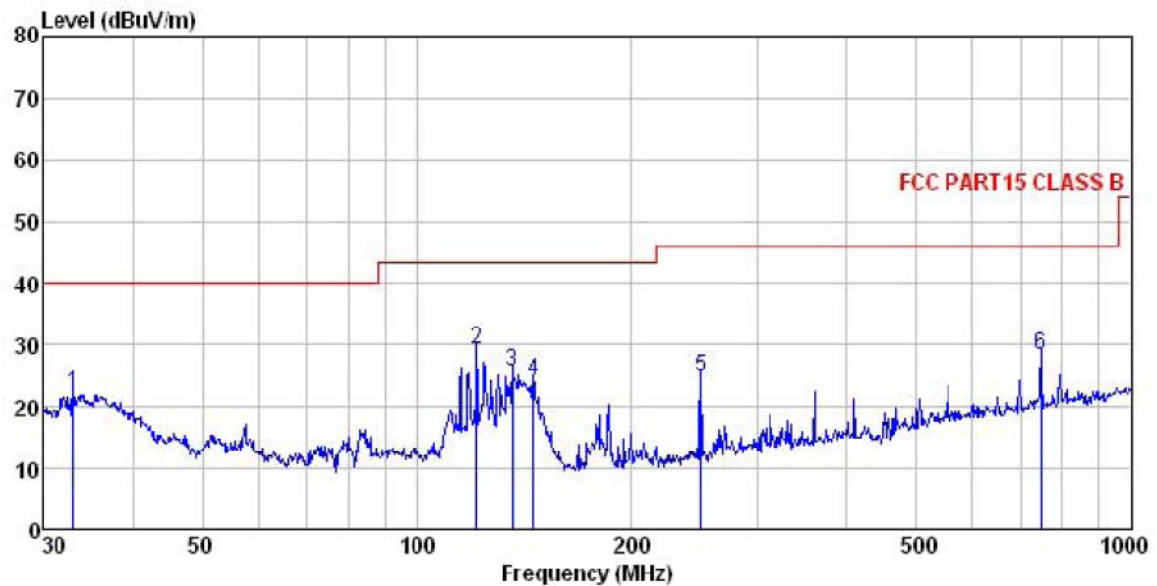
6.7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205 RSS-Gen section 4.9																								
Test Method:	ANSI C63.4:2003 RSS-Gen section 4.9																								
Test Frequency Range:	9KHz to 25GHz 30MHz to 40GHz																								
Test site:	Measurement Distance: 3m																								
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr><tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	Peak	1MHz	10Hz	Average Value	
Frequency	Detector	RBW	VBW	Remark																					
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value																					
Above 1GHz	Peak	1MHz	3MHz	Peak Value																					
	Peak	1MHz	10Hz	Average Value																					
Limit:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr><tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr><tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr><tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr><tr><td>74.0</td><td>Peak Value</td></tr></table>					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.0	Quasi-peak Value	88MHz-216MHz	43.5	Quasi-peak Value	216MHz-960MHz	46.0	Quasi-peak Value	960MHz-1GHz	54.0	Quasi-peak Value	Above 1GHz	54.0	Average Value	74.0	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																							
30MHz-88MHz	40.0	Quasi-peak Value																							
88MHz-216MHz	43.5	Quasi-peak Value																							
216MHz-960MHz	46.0	Quasi-peak Value																							
960MHz-1GHz	54.0	Quasi-peak Value																							
Above 1GHz	54.0	Average Value																							
	74.0	Peak Value																							
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.																								

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 2. 9 kHz to 30MHz is too low, so only shows the data of above 30MHz in this report.

Below 1GHz

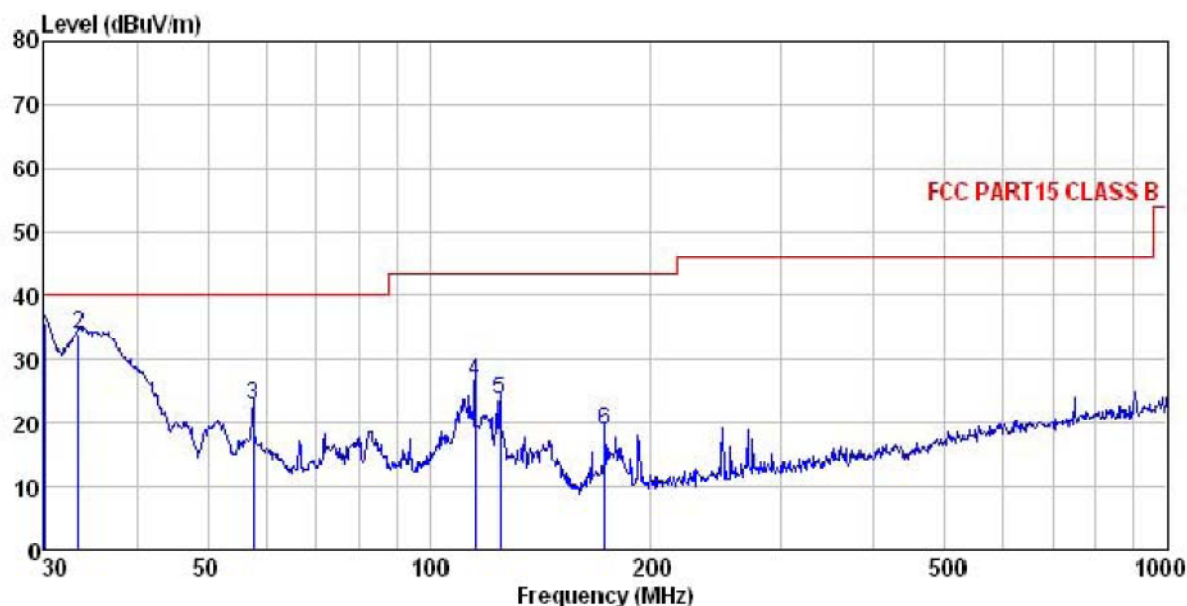
Horizontal :



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
 EUT : Smart phone
 Model : R55
 Test mode : WIFI mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: A-bomb
 REMARK :

	Freq	ReadLevel	AntennaFactor	CableLoss	PreampFactor	Level	Limit	OverLimit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	33.095	35.53	12.31	0.91	26.61	22.14	40.00	-17.86	QP
2	121.123	46.36	10.29	2.18	29.68	29.15	43.50	-14.35	QP
3	135.982	44.44	8.45	2.35	29.44	25.80	43.50	-17.70	QP
4	145.351	42.76	8.23	2.46	29.30	24.15	43.50	-19.35	QP
5	249.425	39.51	12.07	2.81	29.60	24.79	46.00	-21.21	QP
6	747.483	35.02	19.43	4.35	30.50	28.30	46.00	-17.70	QP

Vertical :



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
 EUT : Smart phone
 Model : R55
 Test mode : WIFI mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: A-bomb
 REMARK :

	Freq	ReadAntenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	30.000	49.04	12.33	0.72	26.27	35.82	40.00	-4.18 QP
2	33.445	47.30	12.31	0.98	26.63	33.96	40.00	-6.04 QP
3	57.594	37.63	12.87	1.37	28.99	22.88	40.00	-17.12 QP
4	115.321	42.97	11.31	2.11	29.78	26.61	43.50	-16.89 QP
5	124.569	41.35	9.80	2.22	29.62	23.75	43.50	-19.75 QP
6	172.599	35.19	9.16	2.68	28.17	18.86	43.50	-24.64 QP

Above 1GHz

Test mode: 802.11b			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	46.36	31.53	8.90	40.24	46.55	74.00	-27.45	Vertical
7236.00	--	--	--	--	--	--	--	Vertical
4824.00	47.35	31.53	8.90	40.24	47.54	74.00	-26.46	Horizontal
7236.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11b			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	36.52	31.53	8.90	40.24	36.71	54.00	-17.29	Vertical
7236.00	--	--	--	--	--	--	--	Vertical
4824.00	37.28	31.53	8.90	40.24	37.47	54.00	-16.53	Horizontal
7236.00	--	--	--	--	--	--	--	Horizontal

Test mode: 802.11b			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	47.76	31.58	8.98	40.15	48.17	74.00	-25.83	Vertical
7311.00	--	--	--	--	--	--	--	Vertical
4874.00	46.84	31.58	8.98	40.15	47.25	74.00	-26.75	Horizontal
7311.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11b			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	37.24	31.58	8.98	40.15	37.65	54.00	-16.35	Vertical
7311.00	--	--	--	--	--	--	--	Vertical
4874.00	36.26	31.58	8.98	40.15	36.67	54.00	-17.33	Horizontal
7311.00	--	--	--	--	--	--	--	Horizontal

Test mode: 802.11b			Test channel: Highest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	48.29	31.69	9.08	40.03	49.03	74.00	-24.97	Vertical
7386.00	--	--	--	--	--	--	--	Vertical
4924.00	47.61	31.69	9.08	40.03	48.35	74.00	-25.65	Horizontal
7386.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11b			Test channel: Highest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	39.51	31.69	9.08	40.03	40.25	54.00	-13.75	Vertical
7386.00	--	--	--	--	--	--	--	Vertical
4924.00	38.55	31.69	9.08	40.03	39.29	54.00	-14.71	Horizontal
7386.00	--	--	--	--	--	--	--	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. "--", means this data is too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode: 802.11g			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	43.42	31.53	8.90	40.24	43.61	74.00	-30.39	Vertical
7236.00	--	--	--	--	--	--	--	Vertical
4824.00	47.22	31.53	8.90	40.24	47.41	74.00	-26.59	Horizontal
7236.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11g			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	33.38	31.53	8.90	40.24	33.57	54.00	-20.43	Vertical
7236.00	--	--	--	--	--	--	--	Vertical
4824.00	37.63	31.53	8.90	40.24	37.82	54.00	-16.18	Horizontal
7236.00	--	--	--	--	--	--	--	Horizontal

Test mode: 802.11g			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	46.60	31.58	8.98	40.15	47.01	74.00	-26.99	Vertical
7311.00	--	--	--	--	--	--	--	Vertical
4874.00	45.67	31.58	8.98	40.15	46.08	74.00	-27.92	Horizontal
7311.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11g			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	36.37	31.58	8.98	40.15	36.78	54.00	-17.22	Vertical
7311.00	--	--	--	--	--	--	--	Vertical
4874.00	36.25	31.58	8.98	40.15	36.66	54.00	-17.34	Horizontal
7311.00	--	--	--	--	--	--	--	Horizontal

Test mode: 802.11g			Test channel: Highest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	49.02	31.69	9.08	40.03	49.76	74.00	-24.24	Vertical
7386.00	--	--	--	--	--	--	--	Vertical
4924.00	47.04	31.69	9.08	40.03	47.78	74.00	-26.22	Horizontal
7386.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11g			Test channel: Highest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	40.23	31.69	9.08	40.03	40.97	54.00	-13.03	Vertical
7386.00	--	--	--	--	--	--	--	Vertical
4924.00	36.55	31.69	9.08	40.03	37.29	54.00	-16.71	Horizontal
7386.00	--	--	--	--	--	--	--	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. "--", means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode: 802.11n(H20)			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	46.84	31.53	8.90	40.24	47.03	74.00	-26.97	Vertical
7236.00	--	--	--	--	--	--	--	Vertical
4824.00	46.96	31.53	8.90	40.24	47.15	74.00	-26.85	Horizontal
7236.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11n(H20)			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	36.25	31.53	8.90	40.24	36.44	54.00	-17.56	Vertical
7236.00	--	--	--	--	--	--	--	Vertical
4824.00	36.52	31.53	8.90	40.24	36.71	54.00	-17.29	Horizontal
7236.00	--	--	--	--	--	--	--	Horizontal

Test mode: 802.11n(H20)			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	46.62	31.58	8.98	40.15	47.03	74.00	-26.97	Vertical
7311.00	--	--	--	--	--	--	--	Vertical
4874.00	46.74	31.58	8.98	40.15	47.15	74.00	-26.85	Horizontal
7311.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11n(H20)			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	36.51	31.58	8.98	40.15	36.92	54.00	-17.08	Vertical
7311.00	--	--	--	--	--	--	--	Vertical
4874.00	36.92	31.58	8.98	40.15	37.33	54.00	-16.67	Horizontal
7311.00	--	--	--	--	--	--	--	Horizontal

Test mode: 802.11n(H20)			Test channel: Highest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	47.48	31.69	9.08	40.03	48.22	74.00	-25.78	Vertical
7386.00	--	--	--	--	--	--	--	Vertical
4924.00	48.03	31.69	9.08	40.03	48.77	74.00	-25.23	Horizontal
7386.00	--	--	--	--	--	--	--	Horizontal
Test mode: 802.11n(H20)			Test channel: Highest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	37.60	31.69	9.08	40.03	38.34	54.00	-15.66	Vertical
7386.00	--	--	--	--	--	--	--	Vertical
4924.00	38.24	31.69	9.08	40.03	38.98	54.00	-15.02	Horizontal
7386.00	--	--	--	--	--	--	--	Horizontal

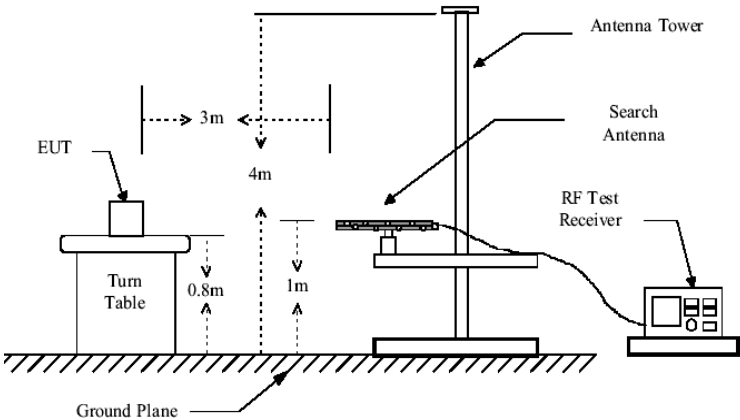
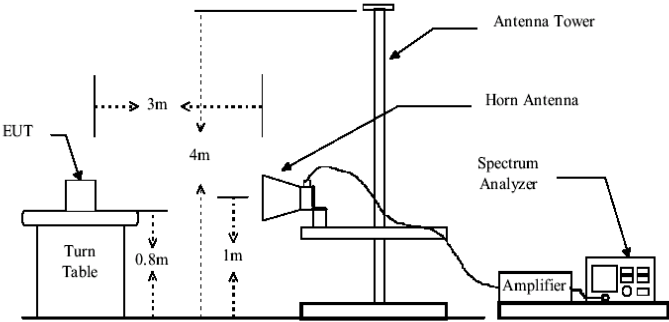
Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. "--", means this data is too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

6.8 Receiver spurious emissions

Test Requirement:	RSS-Gen section 4.10				
Test Method:	RSS-Gen section 4.10				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		54.0		Average Value
			74.0		Peak Value
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.				

Test Requirement:	RSS-Gen section 4.10				
Test Method:	RSS-Gen section 4.10				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		54.0		Average Value
			74.0		Peak Value
Test Procedure:	7. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 8. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 9. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 10. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 11. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 12. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.				

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

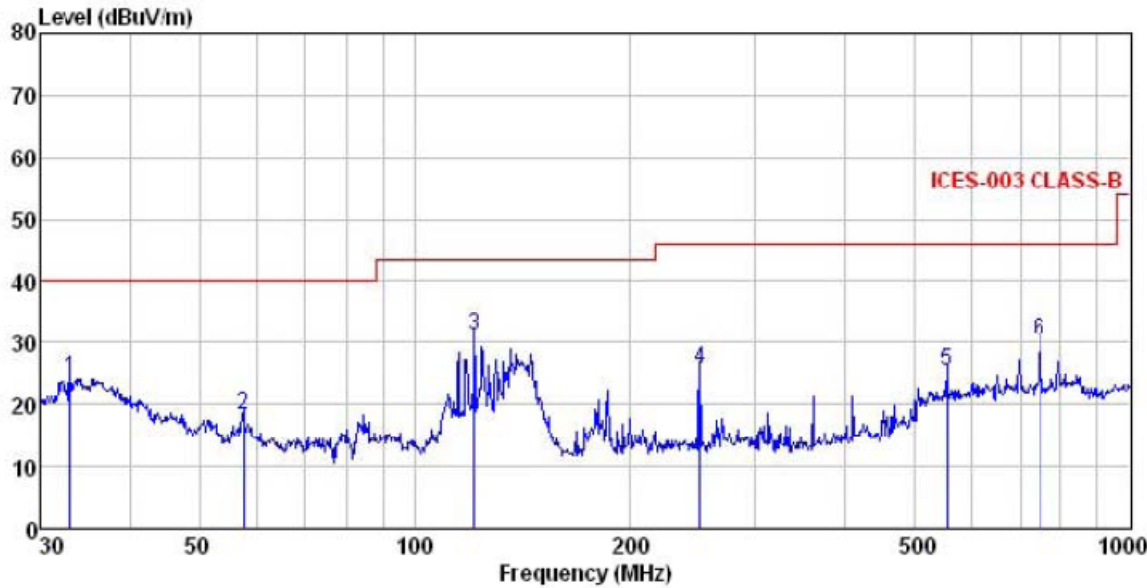
Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.

Measurement data:

Below 1GHz

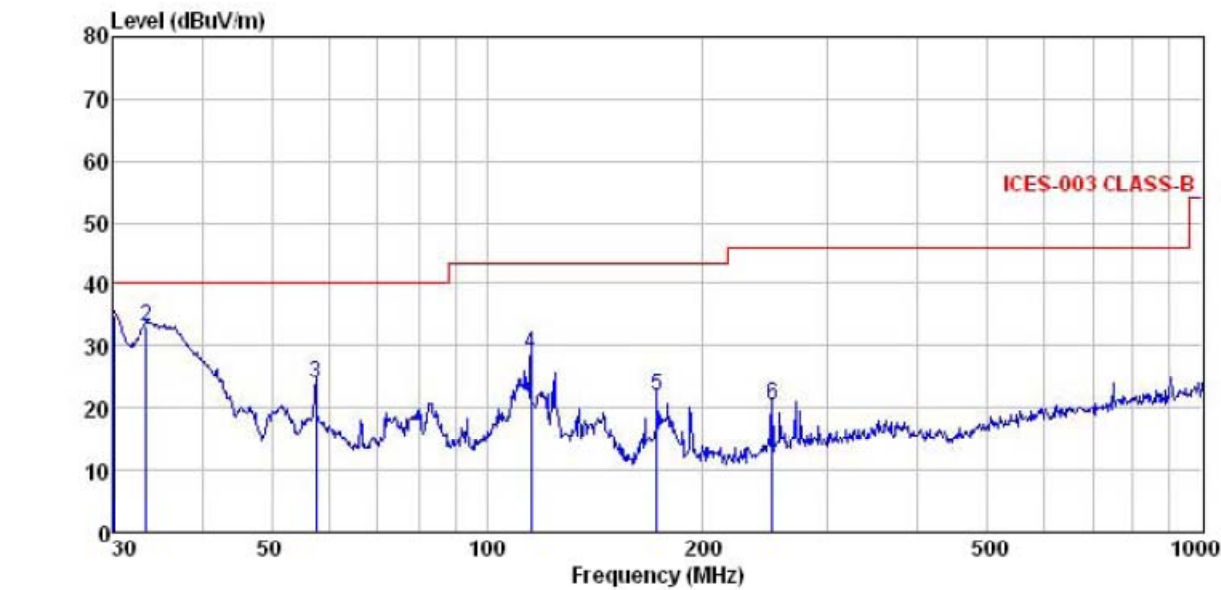
Horizontal:



Site : 3m chamber
Condition : ICES-003 CLASS-B 3m VULB9163(30M1G) HORIZONTAL
EUT : Smart phone
Model : R55
Test mode : WIFI RX mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Humi:55%
Test Engineer: A-bomb
REMARK :

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	dBuV/m	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	33.095	37.53	12.31	0.91	26.61	24.14	40.00	-15.86	QP
2	57.594	33.02	12.87	1.37	28.99	18.27	40.00	-21.73	QP
3	121.123	48.36	10.29	2.18	29.68	31.15	43.50	-12.35	QP
4	249.425	40.51	12.07	2.81	29.60	25.79	46.00	-20.21	QP
5	552.883	34.45	17.62	3.89	30.54	25.42	46.00	-20.58	QP
6	747.483	37.02	19.43	4.35	30.50	30.30	46.00	-15.70	QP

Vertical:



Site : 3m chamber
Condition : ICES-003 CLASS-B 3m VULB9163(30M1G) VERTICAL
EUT : Smart phone
Model : R55
Test mode : WIFI RX mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Humi:55%
Test Engineer: A-bomb
REMARK :

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	dBuV/m	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.000	48.04	12.33	0.72	26.27	34.82	40.00	-5.18	QP
2	33.445	46.30	12.31	0.98	26.63	32.96	40.00	-7.04	QP
3	57.594	38.63	12.87	1.37	28.99	23.88	40.00	-16.12	QP
4	115.321	44.97	11.31	2.11	29.78	28.61	43.50	-14.89	QP
5	172.599	38.19	9.16	2.68	28.17	21.86	43.50	-21.64	QP
6	249.425	35.04	12.07	2.81	29.60	20.32	46.00	-25.68	QP

Remark: The emissions above 1GHz only noise floor, so not recorded in report.